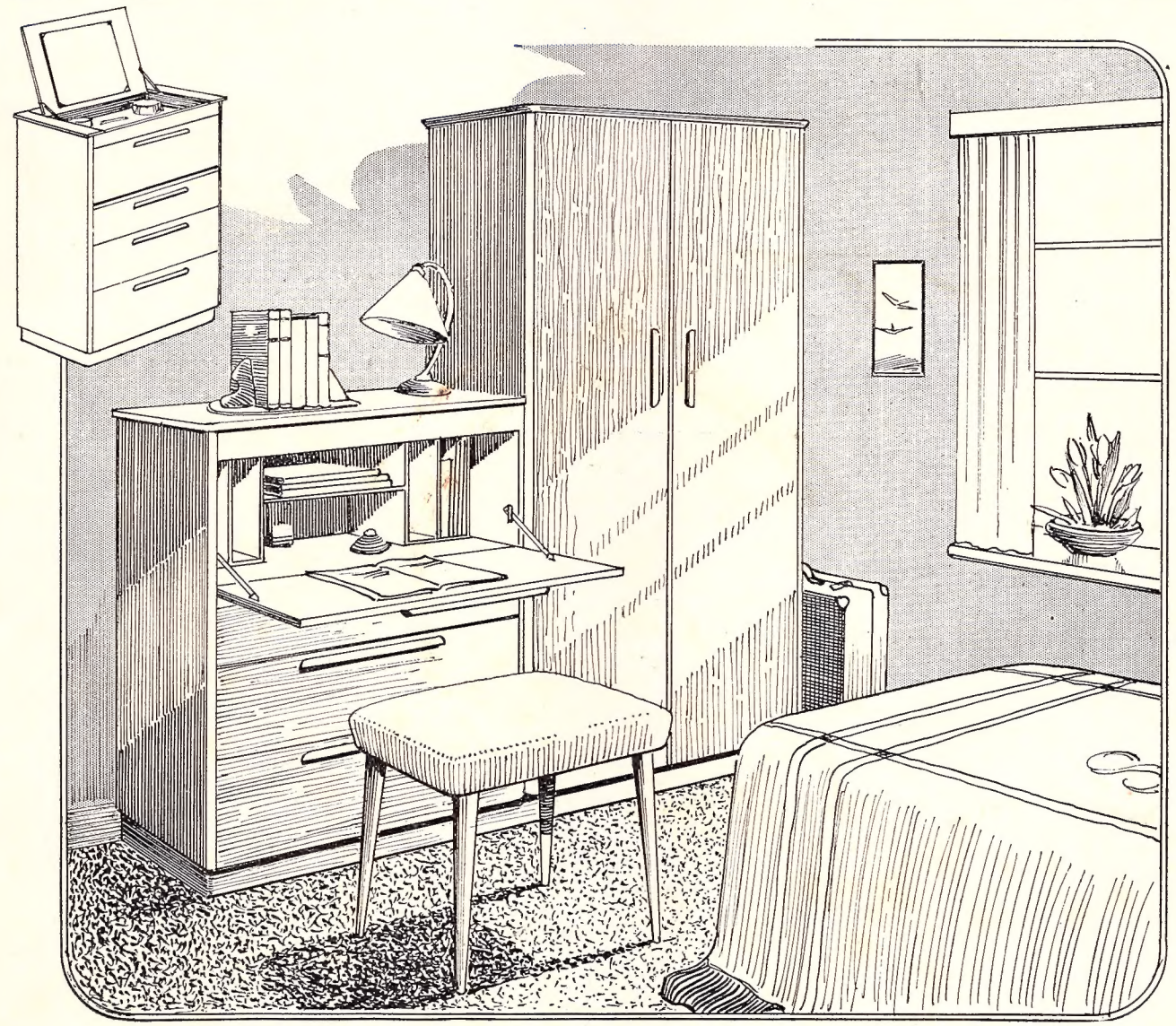
# WOODWORKER

VOL. LX. No. 748

MARCH
1956

ONE SHILLING



## FURNITURE FOR THE TEEN-AGER'S BEDROOM

*Features this month*

POLISHING—Fadding and Colouring : WORKSHOP PRACTICE—Marking out
OCCASIONAL TABLE : WORKSHOP CABINET : PUPPETRY—The Stage
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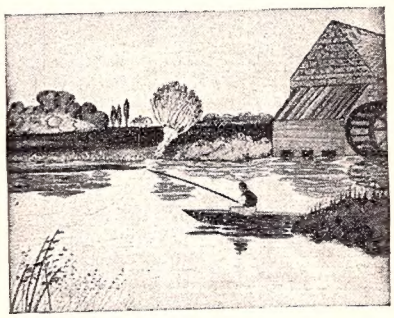

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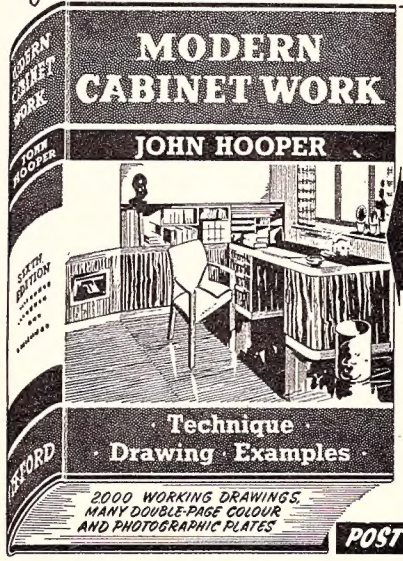


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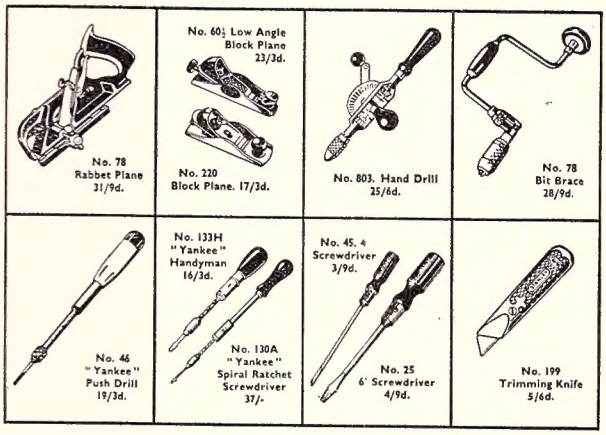
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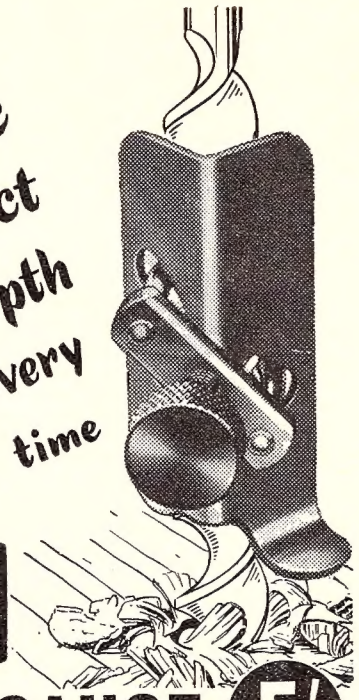

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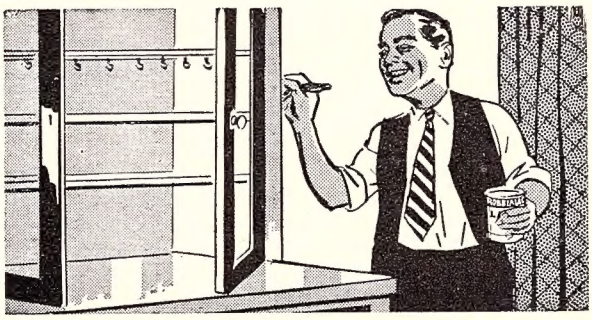

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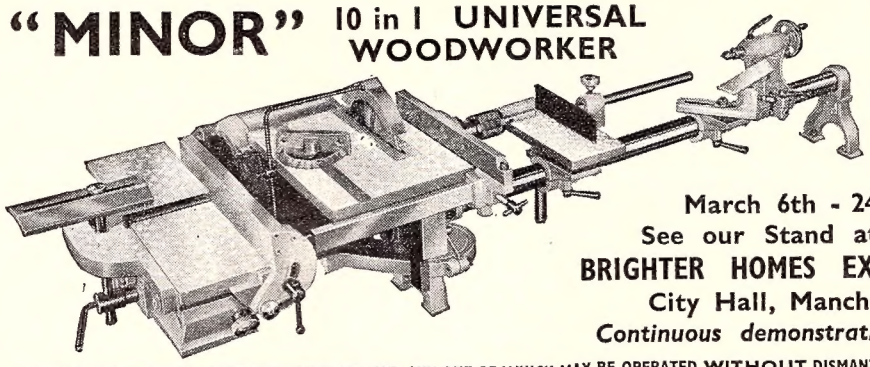

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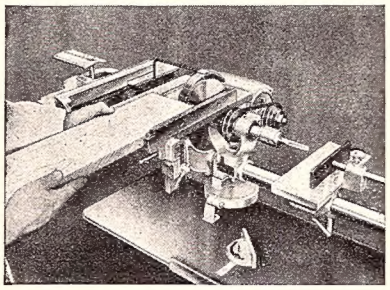
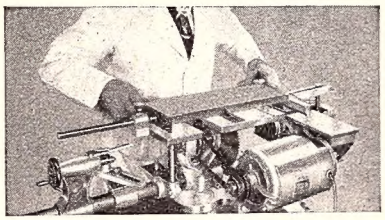
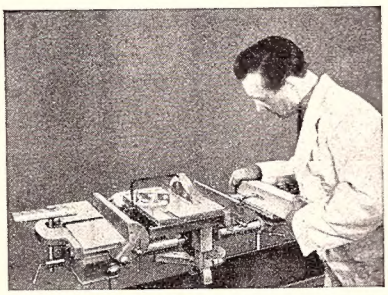


**TILTING SAW TABLE**—7" dia. Circular Saw giving 2½" cut. Mortiser & Planer ready for use.



**THE COMBINATION TABLE**—being used or Panel Cutting. Very useful for repetition work.



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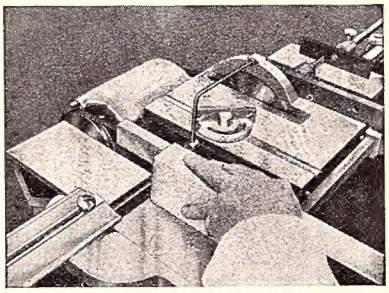

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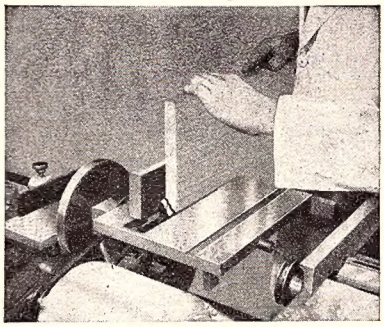

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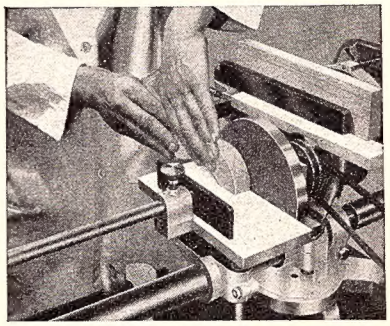

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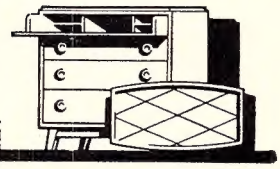
MARCH, 1956



## FURNISHING THE SMALL HOUSE

# TEEN-AGER'S BEDROOM

*Television, radio, and other distractions can make serious study by a teen-age student difficult if not impossible. Rarely can a separate room be set aside for the purpose of study in the small contemporary house, so generally the only sanctuary a young student has is the bedroom and the pieces we illustrate are designed for this room*

THE furniture is simple and consists of a small hanging wardrobe and bureau dressing chest as shown in Fig 1. Also a divan bed headboard with bookshelves flanked by a bedside cupboard which will be dealt with in a later article. The wardrobe has a hat shelf with a pull-out hanger beneath. The triple purpose chest can be mounted on a plinth with the wardrobe as shown in Fig. 1 or each piece may be an individual item on separate plinths.

**Materials.**—Because of increasing prices of timber (as with everything else today) economy has been effected in construction as well as in labour, bearing in mind the man with a limited kit of tools. It is proposed to use chipboard wherever possible and a comparatively inexpensive wood such as obeche for the interiors. The wardrobe doors and the fall-front of the bureau chest should be in clamped and veneered blockboard. Lift-up top and drawer fronts are in veneered multiply.

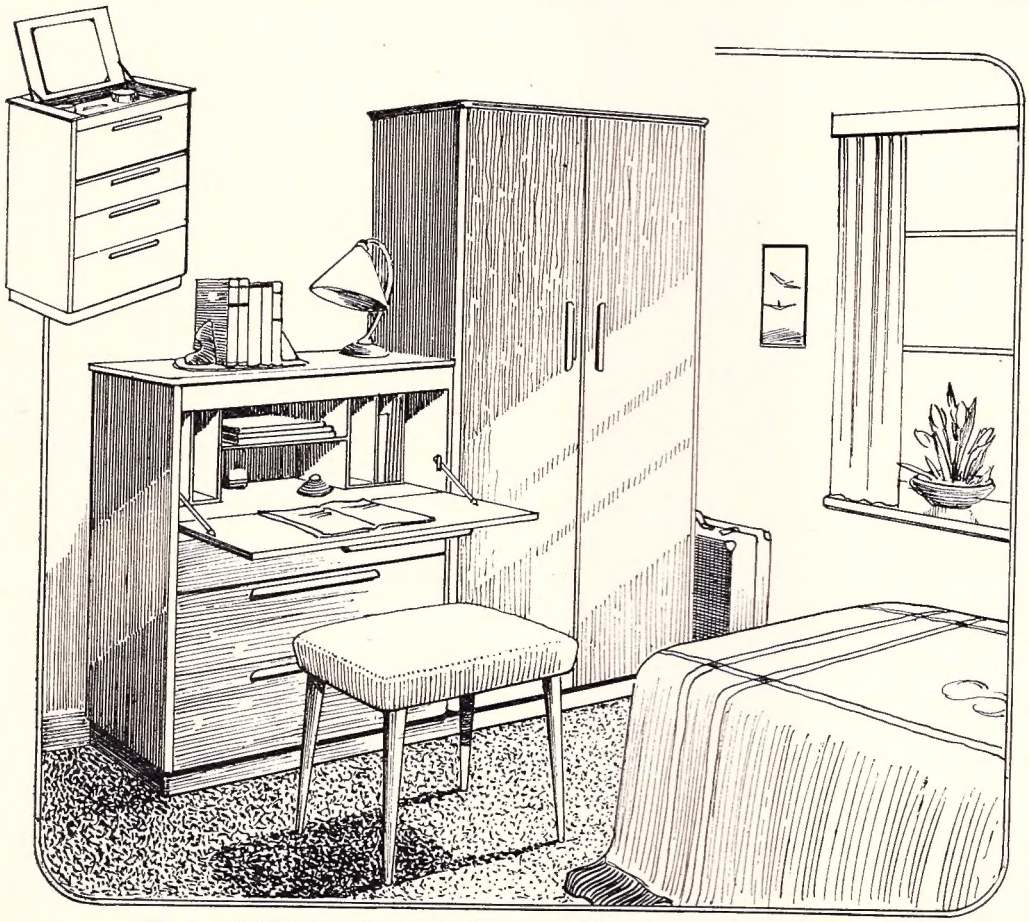


FIG. 1. BEDROOM FURNITURE FOR THE STUDENT BOY OR GIRL

**This would look well in either oak or mahogany finished in natural shade. The pieces could be made up separately or mounted on a common plinth. Sizes: Bureau chest 3 ft. 6 in. high 30 in. wide, 18 in. deep; Wardrobe 5 ft. 9¾ in. high, 30 in. wide, 18 in. deep**

Backs can be ¼ in. thick plywood or ⅛ in. thick hardboard. Good quality chipboard veneered oak with a backing veneer of mahogany is obtainable and a sheet 8 ft. by 4 ft. can be cut economically as shown in Fig. 2. If preferred ⅜ in. thick plywood may be used for the ends, tops, and bottoms, in which case the wardrobe end linings will be ¾ in. thick.

### THE WARDROBE

Pilasters (A) should be nice straight-grained hardwood grooved to receive the tongued plywood or chipboard ends (H). Leave the rounding until glued and cramped together. Add

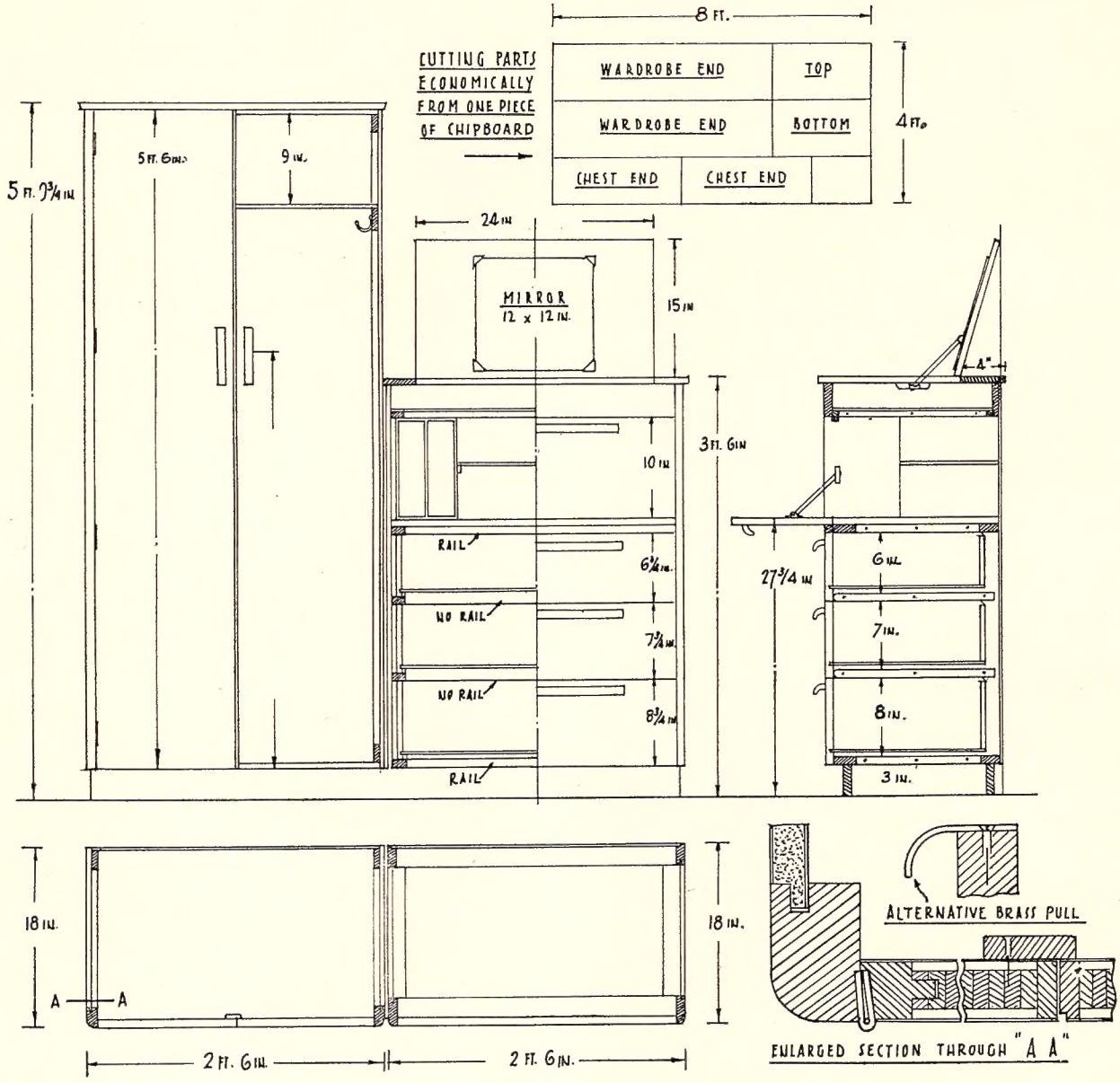



**FIG. 2. DIMENSIONED ELEVATIONS AND PLAN, AND ENLARGED DETAILS**

## CUTTING LISTS

These lists are for individual plinths. If a common plinth is fitted the items should be amended accordingly.

### BUREAU DRESSING CHEST

| | | Long ft. | Wide in. | Thick in. | |
|---|---|---|---|---|---|
| 1 | Plinth front | 2 | 5½ | 3¼ | ⅞ |
| 2 | Plinth ends | 1 | 5 | 3¼ | ⅞ |
| 1 | Plinth back | 2 | 5 | 3¼ | ⅞ |
| (L) 2 | Front pilasters | 3 | 3 | 3 | ¾ |
| (M) 2 | Back ditto | 3 | 3 | 2½ | ¾ |
| (N) 2 | Top rails | 2 | 6 | 4 | ¾ |
| (O) 3 | Carcase rails | 2 | 6 | 2¼ | ¾ |
| (P) 1 | Mid rail | 2 | 6 | 3 | ¾ |
| (Q) 4 | Runners | 1 | 2½ | 1½ | ¾ |
| (R) 4 | Ditto | 1 | 5½ | 1½ | ¾ |
| (S) 1 | Fall front | 2 | 5 | 10¼ | ¾ |
| 1 | Drawer front | 2 | 5 | 7 | ¾ |
| 1 | Ditto | 2 | 5 | 8 | ¾ |
| 1 | Ditto | 2 | 5 | 9 | ¾ |
| (T) 1 | Mid board | 2 | 5½ | 17¼ | ¾ |
| (U) 1 | Lift up top | 2 | 0½ | 15¼ | ½ |
| (V) 1 | Back piece | 2 | 1½ | 4¼ | ½ |
| (W) 2 | End pieces | 1 | 7½ | 3¾ | ½ |
| 1 | Fillet | 2 | 5 | 1¼ | ½ |
| 1 | For 3 fillets | 5 | 0 | ¾ | ½ |
| (X) 2 | Ends | 3 | 3 | 14¼ | ½ |
| 2 | Drawer sides | 1 | 4 | 6¼ | 7/16 |
| 2 | Ditto | 1 | 4 | 7¼ | 7/16 |
| 2 | Ditto | 1 | 4 | 8¼ | 7/16 |
| 1 | Drawer back | 2 | 5 | 5¼ | 7/16 |
| 1 | Ditto | 2 | 5 | 6¼ | 7/16 |
| 1 | Drawer back | 2 | 5 | 7¼ | 7/16 |
| 6 | For Stationery case | | 10½ | 10 | 5/16 |
| 1 | Ditto | 1 | 4½ | 10 | 5/16 |
| 4 | Ditto | | 7 | 10 | 5/16 |
| (Y) 1 | Carcase back | 3 | 3 | 29¾ | ¼ |
| 3 | Drawer bottoms | 2 | 4½ | 16 | ¼ |
| (Z) 1 | Toilet bottom | 2 | 5½ | 16¾ | ¼ |

Trimming allowance has been made in lengths and widths. Thicknesses are net.

Wardrobe doors, chest top, and fall front are given full size. Some reduction should be made if these are clamped.

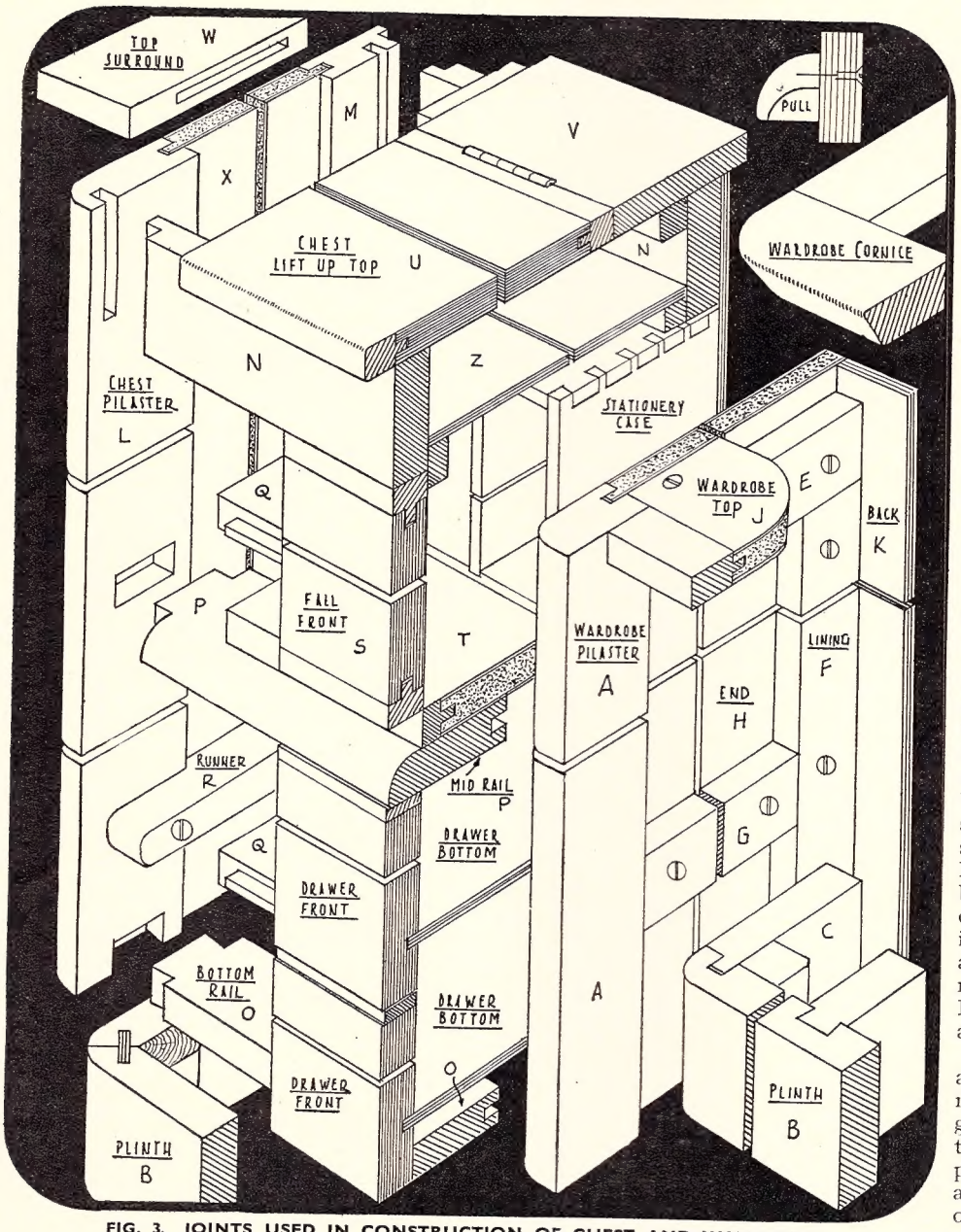



FIG. 3. JOINTS USED IN CONSTRUCTION OF CHEST AND WARDROBE

## CUTTING LIST—WARDROBE

| | | | Long ft. | Long in. | Wide in. | Thick in. |
|---|---|---|---|---|---|---|
| (A) | 2 | Pilasters | 5 | 6½ | 2 | 1⅛ |
| (B) | 1 | Plinth front | 2 | 5½ | 3¼ | ⅞ |
| (C) | 2 | Plinth ends | 1 | 5 | 3¼ | ⅞ |
| | 1 | Plinth back | 2 | 5 | 3¼ | ⅞ |
| (D) | 2 | Doors | 5 | 6½ | 14 | ¾ |
| | 2 | Door Clamps | 5 | 6½ | 1¼ | ¾ |
| | 1 | Cornice | 2 | 8 | 2½ | ¾ |
| | 2 | Ditto | 1 | 5 | 2½ | ¾ |
| | 1 | Shelf | 2 | 5½ | 16 | ¾ |
| (E) | 4 | End linings | 1 | 4½ | 2 | ⅝ |
| (F) | 2 | Ditto | 5 | 2 | 2 | ⅝ |
| (G) | 2 | Ditto | 1 | 3 | 3 | ⅝ |
| (H) | 2 | Ends | 5 | 6½ | 17 | ½ |
| (J) | 2 | Top and bottom | 2 | 5⅛ | 16¼ | ½ |
| (K) | 1 | Carcase back | 5 | 6½ | 29¼ | ¼ |

See notes under Bureau Chest list.

linings (E, F) by gluing and screwing to the ends in pair. The cross linings (G) support the shelf and are wide enough to take hanging hooks if wanted. These linings are set in from the top, bottom, and rear edges of the ends, forming rebates for the top, bottom (J), and carcase back (K). Work to the chipboard or plywood thickness for the amount of rebate required.

Top and bottom (J) are clamped at front and are glued and screwed to the end linings (E). The rear edges are set in linable enabling the carcase back (K) to be screwed on.

**Doors.**—The doors (D) in blockboard need clamping at the hinged edges to enable the hinge screws to hold, the meeting edges being simply lipped. Top and bottom edges are not seen, Fig. 2 enlarged section. Doors are hinged with four 2½ in. brass butt hinges to each. Bolts are fitted inside the left-hand door and a catch or wardrobe lock to the right. Pulls, knobs, or handles are optionable.

The plinth front (B) and ends (C) can be mitred and tongued together or bare-faced tongued, Fig. 3. The plinth back is glued and pinned to rebates or grooves cut in the plinth ends, or it may be lap-dove-tailed.

The shelf should be thick enough to carry the pull-out hanger with its weight of clothes. A shoe rod well back might be added, the toes of shoes resting on the wardrobe bottom. The cornice has a simple moulding with rounded front corners. This is screwed down to the wardrobe top and the return ends butted to it and screwed similarly.

## BUREAU CHEST

Front and back pilasters (L, M) are grooved to receive the bare-faced tongued ends (X). The back pilasters are also rebated to take the carcase back (Y), Fig. 3. The front pilasters are wider in order to cloak the edges of the fall and drawer fronts and the rounding is left until pilasters and ends are glued and cramped together. The

(*Continued on page* 59)

# CHIPS FROM THE CHISEL

SOMETIMES it takes such a little thing to set one's thoughts pricking. With me not long ago it was, of all things, marmalade. Picking up an old newspaper, I had chanced to see in an article on how to make it, an appreciative comment on the bright colour and sweet smell of the oranges as they turned into marmalade, a sign, it said, that a new year of creativeness had begun. I found myself turning the words over and over in my mind. "A new year of creativeness." It was a lovely phrase. The article was written under a nom-de-plume. There was nothing to show whether it was by a man or a woman: in spite of the subject, I suspected a man. Whoever it was, there was an all-embracing ring to the words, a positive attitude towards living, which stirred me. Here, in one generous sweep, was foreshadowed varied and many sided activities which might begin with the making of a preserve and might lead you almost anywhere. And that, I thought, is how it should be. Living life creatively and not as a succession of more or less tiresome jobs interspersed with fleeting pleasures is literally to take hold of life. It is an attitude, a manner of approach which can turn our talents to the greatest account and give us joy in them. To work creatively means more than just to work. It means putting art into it; that last ingredient which we alone can contribute as persons, something that is unique to each individual because it is coloured by his taste and judgment and mode of thought. Any man can, by constant repetition, acquire the requisite skill to do a competent job; but to make it more than that, to turn it into a really fine piece of work, he has to put into it a skill of the mind based on a real interest in the act of creation which can turn even the making of a draining board into something beautiful of its kind.

* * * *

We can so easily, amid the ordinariness of day to day living, overlook the things that are not at all ordinary in our lives, and one of the chief of these I would call that power we have of creating out of the raw materials of existence things that are seemly, and useful and beautiful, which can add so much in themselves to the pleasantness of life and can give us, if we will, so much pleasure in the making. Whether our raw material be oranges or garden produce for preserving, timber for woodwork, or fabrics or wool or paint and paper, words for the writer, harmonies for the musician, here are the ingredients upon which to try our skills and learn the elements of craftsmanship, its patience and honest cunning and the heights to which it can lead us, like the old organist in Browning's poem.

And I know not if, save in this, such gift be allowed to man
That out of three sounds he frame not a fourth sound but a star.
Consider it well: each tone of our scale in itself is nought;
It is everywhere in the world—loud, soft, and all is said:
Give it to me to use! I mix it with two in my thought;
And, there! Ye have heard and seen: consider and bow the head.

## THE CREATIVE YEAR

*"With so many mechanical aids both for work and pleasure, we lose sight of the very real pleasure that is to be found in making and doing for their own sake"*

The trouble is that so often, at heart, we come with a grudging approach to the work involved. It would seem that of all created beings men are so slow to learn the things that belong to their good, and because in comparison with more primitive times the amount of effort required of us nowadays is small, we easily fall into the habit of disliking effort. With so many mechanical aids both for work and pleasure, we lose sight of the very real pleasure that is to be found in making and doing for their own sake, if only we will allow sufficient room for them in our lives and not just push them in as rather tiresome chores to be got through somehow before turning with a sigh of relief to other things.

* * * *

It is, I think, true to say that nowadays many more people are doing jobs for themselves in and around the house than formerly, compelled to it by rising costs, and are, moreover reaching a high degree of competence. Once we ourselves begin to accept this position willingly and cheerfully and concentrate on getting the best possible results, the battle is as good as won. It means that we allow our interest to have full scope. We become observant, critical of methods and materials, developing ideas of our own, with increasing confidence planning more ambitious projects and turning with heightened interest from one to the other, planning, say, furniture and fitments, decoration and plans for the garden, seeing things now as a related whole, one enhancing and supporting the other, and not as a number of miscellaneous jobs. Minor activities too have a way of developing, from filling the store cupboard from the harvest of the garden to making rugs for the floors. It is all activity, and very happy activity, which gives the house a charm and individuality that only such personal care is capable of giving. It is the spirit of creation moving in the one place where it still has free range, depending upon our own skill and craftsmanship to get the best out of the materials we use, bringing with it that indefinable air of quality which is too often sadly lacking in the world outside. (195)

---

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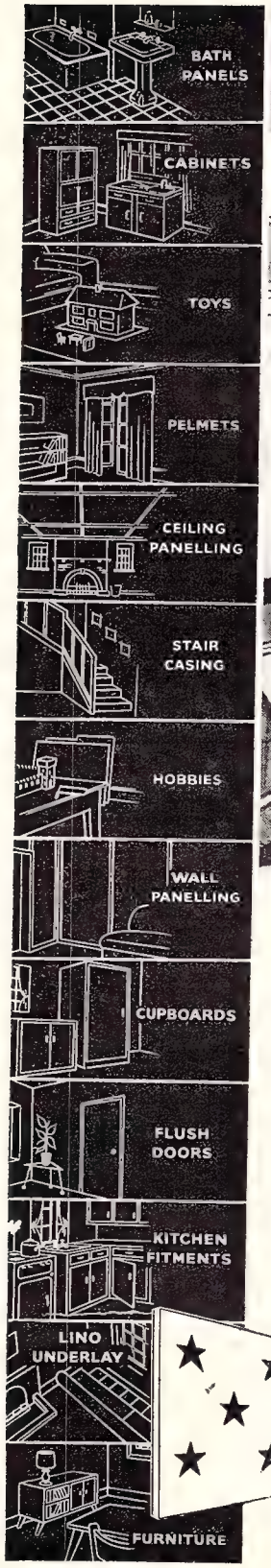

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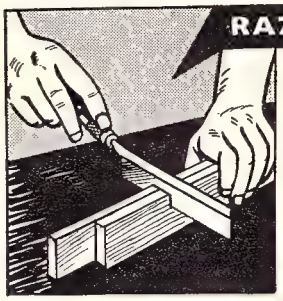

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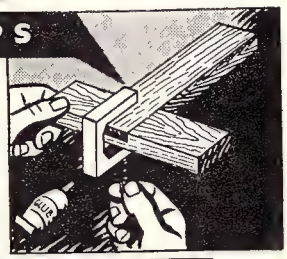

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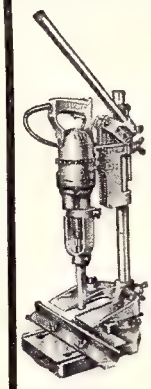

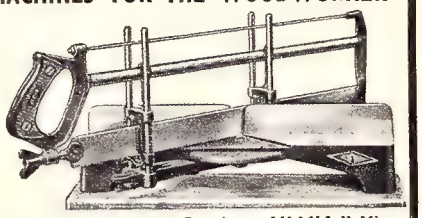

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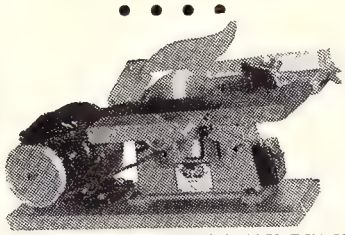

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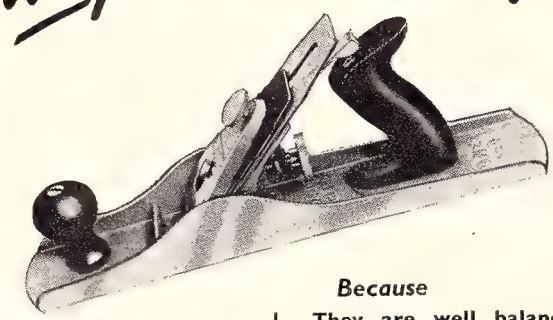

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# • • PUPPETRY • • •

# Part 1. THE STAGE

*Recent years have seen a revival of puppetry and many clubs have been formed to foster the art. As entertainment for children, both in the house or at social gatherings, it has few equals. In this first article the bare necessities for the stage are dealt with, such items as backdrops and the like being left to individual requirements. For storage purposes the whole assembly can be quickly dismantled and packed in the two containers which form the stage*

THE stage consists of two boxes each 3 ft. 4 in. by 15 in. by 6 in. into which are packed the uprights and the other equipment when not in use. Each has two corners to take $1\frac{1}{4}$ in. square uprights; the opposite corners are common through dovetails. Both are fitted with a (plywood or hardboard) lid which is inset within the carcase, its edges resting on fillets as indicated in Fig. 3. It is

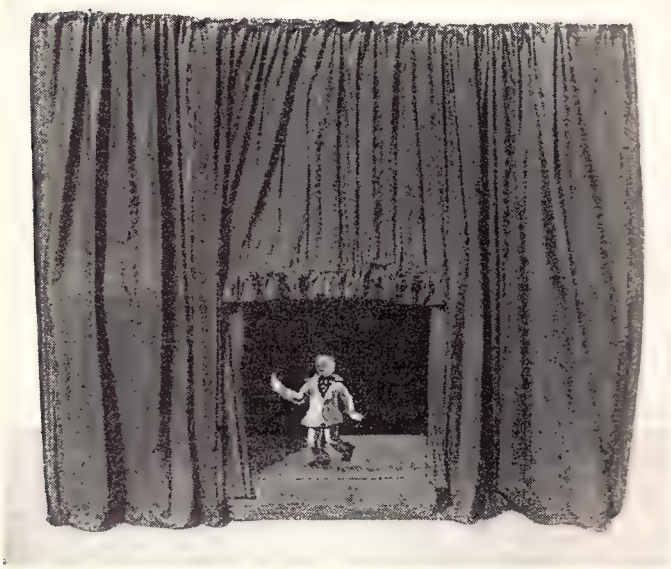


**FIG. 1. THE STAGE**
**Note the deep frill on the proscenium arch which hides the curtain rail, cord, etc. If operating the theatre in front of a large audience the stage can be erected on a table**

hinged to the carcase by a pair of backflaps, the knuckles of which are housed in. Two brass side hook catches serve to hold it closed. The bottoms are plywood glued and pinned on, the nails being punched well down and the holes filled with stopping. The retaining brackets, for the uprights, are made from eight pieces of strap-iron 8 in. by 1 in. by $\frac{1}{16}$ in. Each of these is drilled and countersunk to take four $\frac{1}{2}$ in. No. 8 screws. The stage is formed by clipping the boxes together with attache-case clips, bottoms uppermost as in Fig. 3.

**Supports.**—The rear supports extend from the

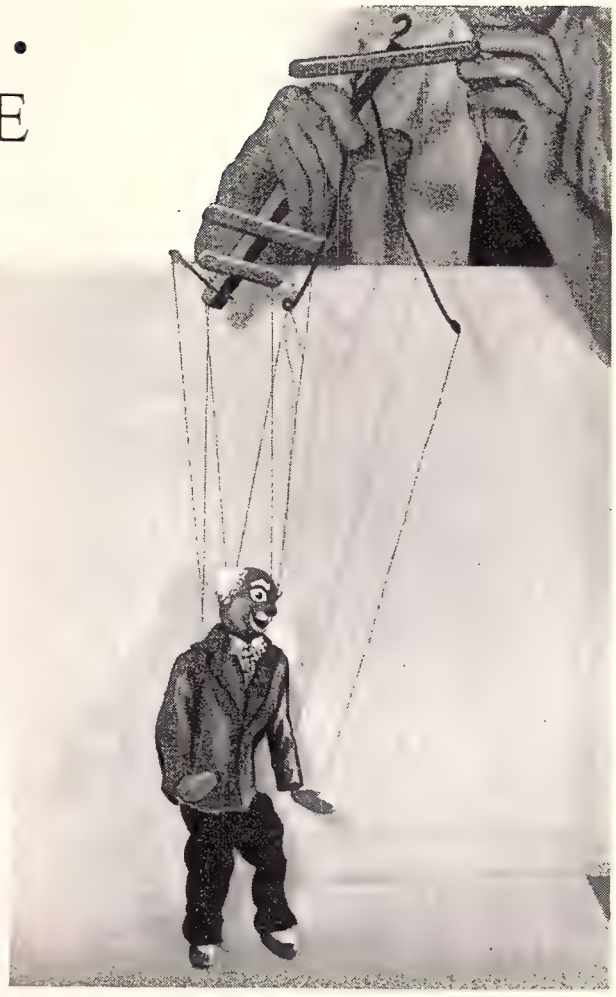


**FIG. 2. DETAILS FOR MAKING THE PUPPETS WILL BE GIVEN IN A FOLLOWING NUMBER**

ground roughly to elbow height and are bridged by a rail dovetailed into the top, Fig. 3. For convenience of packing all uprights, both front and rear, are socketed together. In all cases this takes the form of a common lap joint to which are added 1 in. by $\frac{1}{32}$ in. bands of iron or brass strips as shown in Fig. 3 which complete the socket. The front centre cross-rail, which takes some of the lighting and curtain rail, is supported on brackets fixed to the upper sections of the front uprights as in Fig. 3. The top front rail is dovetailed into the ends thus making the front assembly comparatively rigid.

## CURTAINS

**Fixed Curtains.**—To screen the operator from the audience a curtain is strung across the stage side of the rear frame. From a packing point of view this is best suspended on a length of expanding curtain spring and attached to the top outside edges of the uprights.

The front curtain must be considerably wider than the frame in order to hide (apart from the operator) perches, spare puppets, and the like. This is achieved by fitting a pair of arms to the top of the front uprights. For most purposes an arm of about 22 in. long made from a 2 ft. 6 in. length of $\frac{3}{8}$ in. mild steel rod shaped as in Fig. 4 will be found sufficient.

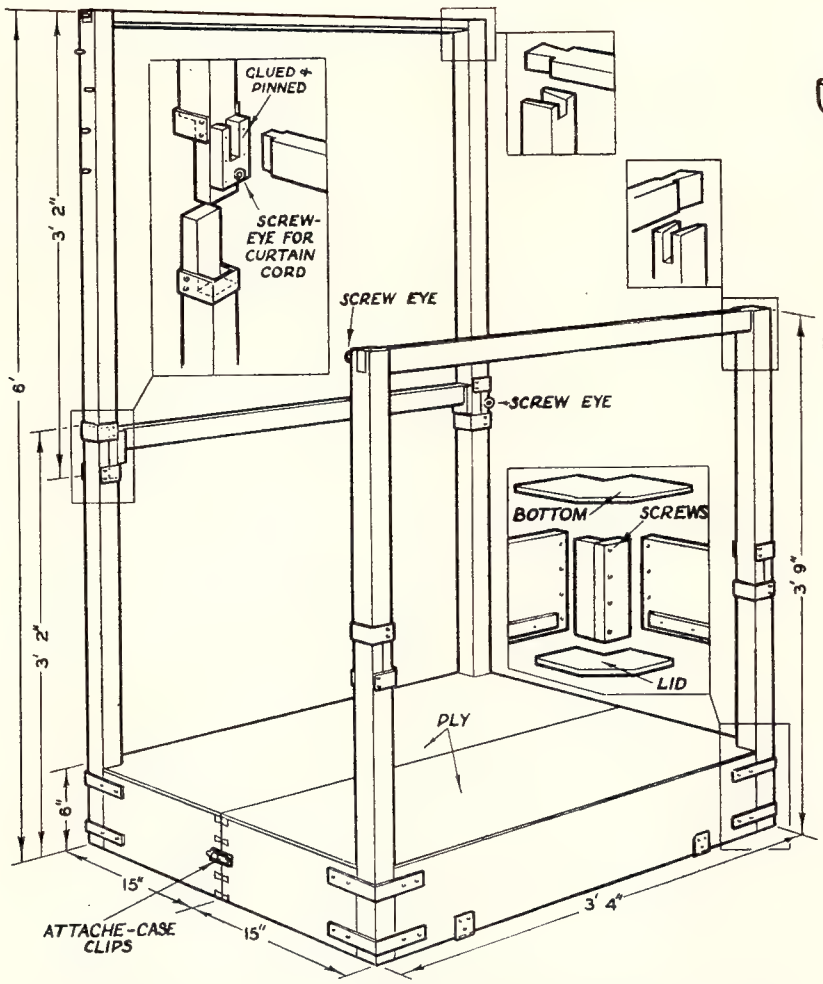



**FIG. 3. PERSPECTIVE VIEW OF MAIN FRAMEWORK AND DETAILS OF PRINCIPAL JOINTS**

**For the purposes of speeding erection it will be found useful if the joints be painted in various colours. No handles are fitted to the boxes as they would no doubt get in the way. Instead two pairs of straps fitted with leather grips are used**

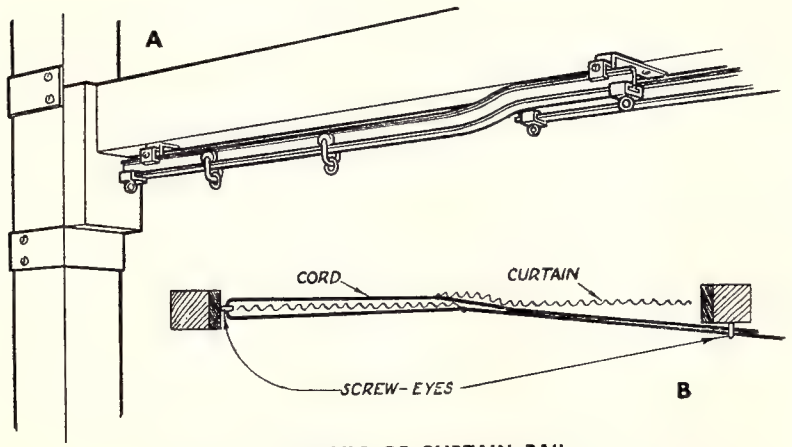



**FIG. 5. DETAILS OF CURTAIN RAIL**

**A, method of fixing runners. B, arranging and tying the curtain control cord**

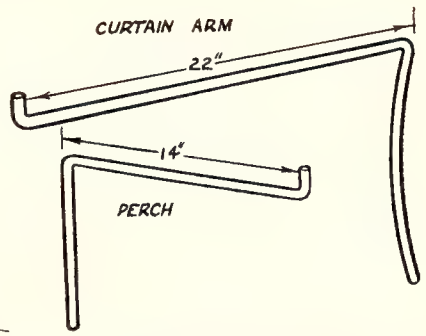


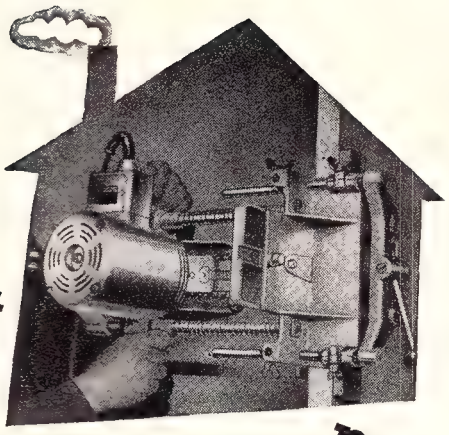

**FIG. 4. FRONT CURTAIN EXTENSION ARM AND PUPPET PERCH**

To hold the arm rigid without an elaborate locking system the three screw-eyes into which it is fitted, are staggered as shown in Fig. 3, and the arm curved to suit. The front curtain can be made as one piece to extend from the end of one arm to the end of the other or made and fitted as separate sections. Whichever arrangement is adopted the centre section must descend below the centre rail by at least two inches to mask the curtain rail, cords, etc. The side sections descend from the arms to the ground.

**Moving Curtains.**—It is well worth giving some consideration to this section to avoid, as much as possible, any hitch at a crucial moment. Make up each curtain so that a good overlap is obtained, about 4 to 6 inches and suspend about 3 inches apart on rollers as in Fig. 6. The length should be so arranged that the bottom edges are about $\frac{1}{2}$ in. from the ground and well weighted with pieces of lead, particularly the leading corners.

**Stringing.**—Blind cord, preferably the same colour as the curtains, is used for this. About 10 ft. is required attached to the curtains and passing through the screw-eyes as indicated in Figs. 3 and 5.

**Lighting.**—Most operators will no doubt arrange their own system of lighting, but for general use the arrangement given will be found satisfactory. Four lamp holders are fitted above the stage and one on each of the uprights at the sides. Four switches control the lights, one acting as a main switch, the remainder controlling two each. To simplify manipulation it is advisable to fix the switches in some kind of order. In Figs. 6 and 7 one such arrangement is shown where the top switch, slightly apart from the others, controls all lighting, the next two top lights, the bottom, side lights. In the wiring diagram, Fig. 7, it will be seen that the side lights have a



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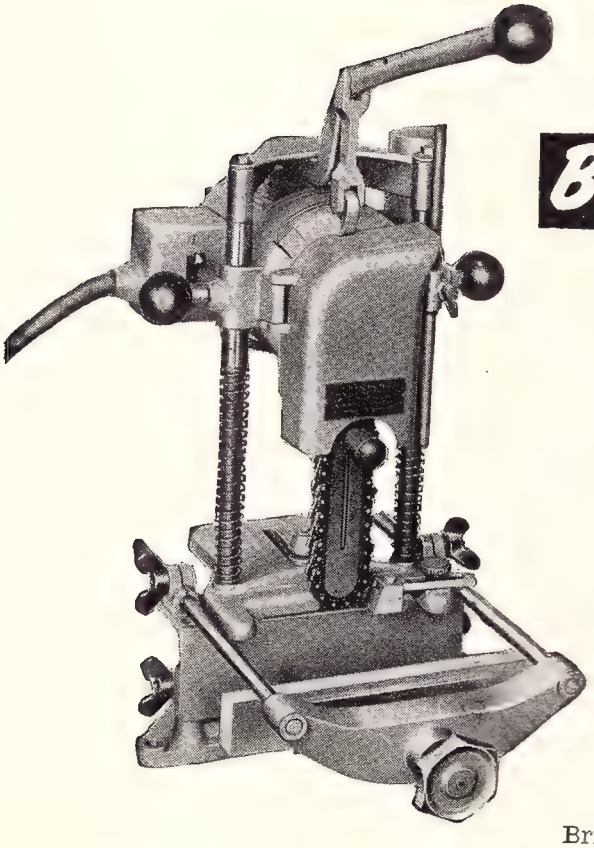

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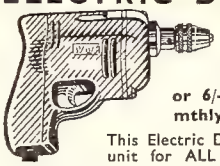

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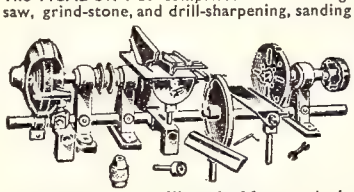

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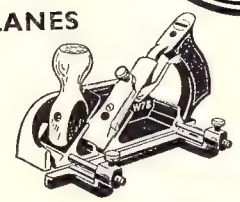

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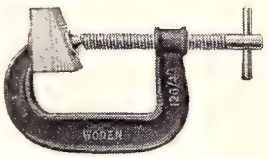

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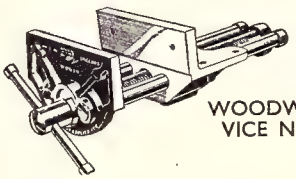

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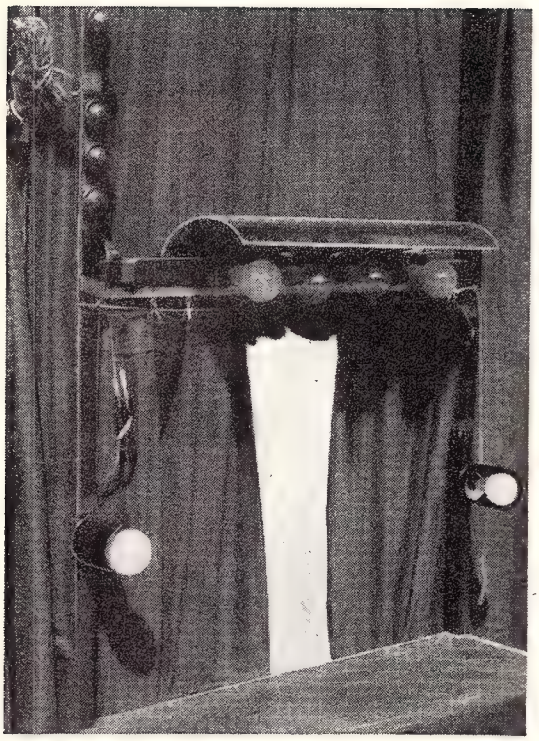

FIG. 6. STAGE VIEWED FROM THE WINGS

## CUTTING LIST

### Timber

| | Long ft. | Long in. | Wide in. | Thick in. |
|---|---|---|---|---|
| Stage Boxes | | | | |
| 2 piece | 3 | 4½ | 6¼ | ½ |
| 2 ,, | 3 | 2 | 6¼ | ½ |
| 4 ,, | 1 | 2¼ | 6¼ | ½ |
| 2 bottoms | 3 | 4½ | 15½ | 3 ply |
| 2 lids | 3 | 3½ | 14½ | ,, ,, |
| 2 fillets | 3 | 3½ | ⅞ | ⅜ |
| 4 ,, | 1 | 1¼ | ⅞ | ⅜ |
| 4 pieces | | 6½ | 1½ | ½ |
| 4 ,, | | 6½ | 1 | ½ |
| Supports (Rear) | | | | |
| 4 pieces | 2 | 1 | — | 1¼ sq. |
| 1 rail | 3 | 4½ | 1½ | ⅞ |
| Front | | | | |
| 4 pieces | 3 | 2½ | — | 1¼ sq. |
| 1 rail (top) | 3 | 4½ | 1½ | ¾ |
| 1 rail (centre) | 3 | 2 | 1½ | ¾ |
| 2 brackets | | 3 | 1½ | ⅜ |

Allowance has been made in lengths and widths. Thicknesses are net.

### Curtains

| | Wide in. | Long yds. |
|---|---|---|
| Fixed | | |
| 1 back | 54 | 1⅓ |
| 2 sides | 36 | 2⅓ |
| 1 front | 54 | 1⅓ |
| Moving | | |
| 2 pieces | 30 | 1 1/16 |

In addition to the above are required, 2 attache-case clips; 4 brass side hooks and eyes; 5 ft. 6 in. by 1 in. by 1/16 in. strap-iron; 2 ft. 9 in. by 1 in. by 1/32 in. iron or brass strip; 2 lengths curtain rail 2 ft. long, with fittings; 1 double pole or heavy duty single switch; 3 tumbler switches; 6 batten-holders; 4 yds. lighting flex; two 2 pin plugs and sockets; screws. (194)

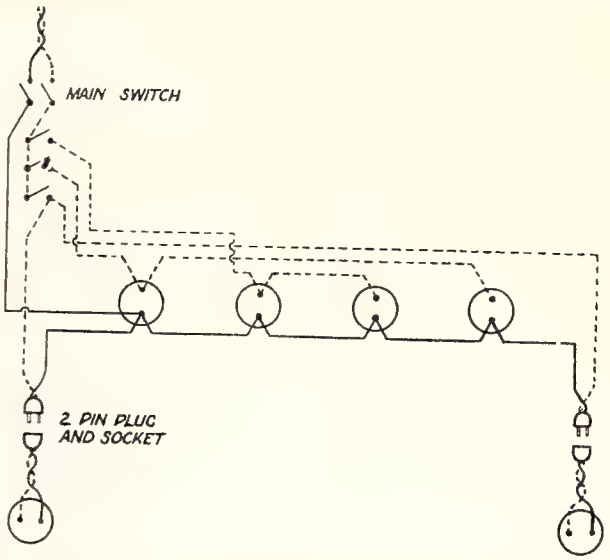


FIG. 7. WIRING CIRCUIT

**If 6 100w. lamps are fitted the amount of current used is almost equal to that of a small electric fire. For this reason it is recommended that a 15 amp. switch be used for the main control not a 5 amp. tumbler. Similarly it is advisable to fit a heavy duty lead from the main switch and to feed the live side of the tumblers. For the convenience of wiring red leads are shown as dotted lines, black, solid**

two-pin plug and socket in their circuit for dismantling, as these are fixed to the bottom sections of the front uprights. Common lighting flex is suitable for wiring a system of this kind, but it will be found easier to do if the flex is unravelled and used as single strands after which the leads can be bound together with black insulation tape or strong thread and fixed.

**Reflectors.**—These can be made of any suitable material. The side light reflectors shown in Fig. 6 for example were cut out from fruit tins, the outer surface being painted with a non-reflecting black paint. For the top lights a sheet of tin-plate was used. Shade rings, normally found on batten-holders, hold the side-light reflectors. The top reflector is held by two simple brackets fixed to the centre cross rail.

**Perches.**—At least two of these are required. They are shaped as in Fig. 4 from a piece of ¼ in. mild steel rod about 18 in. long and serve as brackets on which puppets not in use can be hung. Two screw-eyes, Fig. 3, on each of the front uprights hold them in place.

---

**Forestry,** by T. A. Robbie. With the ever-growing demand for timber, and the heavy inroads made upon forests, it is realised that forestry is not only an important industry, but is a science if the future supply is to keep pace with the demand. This book provides an introduction to the subject suitable for the beginner. It is an interestingly written book, and should be of considerable value to those to whom the subject appeals. Published at 6s. net by English Universities Press Ltd., 102, Newgate Street, London, E.C.1.

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**Planing Note.**—It sometimes happens that, after you have been using the plane on the shooting board for trimming the end grain of wood, the plane ceases to cut although it is still apparently sharp. It is often due to a small gash having been formed in the cutter. This leaves a projection on the wood which, since the plane necessarily remains on the same level relative to the wood, acts as a sort of stop, the gash fitting over it. Short of sharpening the plane afresh, the only plan is to put a strip of wood beneath either the plane or the wood so that a different part of the cutter is in operation.

## MARKING OUT. PART 2

By S. H. GLENISTER, F.Coll.H.

# TEMPLATES and REPETITION WORK

*Continuing his article in this series, our contributor deals with various aids to marking-out which make for easier and more accurate work*

THESE templates are simply marking-out guides devised by woodworkers to overcome difficult or awkward marking out problems or to obtain uniformity when repetition marking out has to be done. Templates take various forms according to the jobs required of them and some of the commonest will be described: others will not be difficult to devise for special purposes if you understand the purposes of those described below.

Fig. 1, A, illustrates a dovetail template. This is sometimes made in wood but is less cumbersome in sheet aluminium or brass. This template gives a uniformity of angle for all the dovetails and is handier to manipulate than the bevel square.

Often the corner of a piece of material is moulded or rebated (as in sash stuff) and it is then not possible to square a line round the wood with the certainty of being accurate. For this purpose a square template is made up. One is shown in Fig. 1, B. It is usually cut from a solid block of, say 3 in. by 3 in. stuff, but two 3 in. by $\frac{5}{16}$ in. pieces about 6 in. long can be glued and screwed together at right angles. The ends must of course be perfectly square with the sides.

A mitre template (Fig. 1, C), which can be also bought in metal, is similar to the square template except for the mitred ends. This, as can be seen, is useful when scribing or mitreing mouldings on sash stuff, etc. Again the 45° angled ends must be planed perfectly true with the sides.

Then we often need the kind of template as shown in Fig. 1, D, for marking out intricate shapes. In some old cabinetmakers' shops you will see hanging on the walls a great variety of these templates, made in either cardboard or thin plywood which have been used for past jobs.

If you have only two or three special shapes (such as the bracket shown here) to mark out it is often economical to make up one bracket first and use this as a pattern to mark the others. In general, however, for repetition work greater accuracy is obtained by making a template in thin plywood and using this for marking all the similar shapes required. The usual method of showing these patterns in books is in squares drawn to scale size as shown in Fig. 1, D. In order to get your full size pattern you mark out your plywood with the same number of squares but of such a size as will suit the work you are doing. For instance, if the drawing in the book shows 8 squares in width and your full size shape is to be 6 in. wide, each of the 8 squares marked on your plywood will need to be $\frac{3}{4}$ in. as $8 \times \frac{3}{4}$ in. $= 6$ in.

Once you have marked out your square net it is an easy matter to transfer the positions where the pattern lines cross the square in the book to your template and to join them up to get the full shape. The template should be cut to shape carefully and accurately.

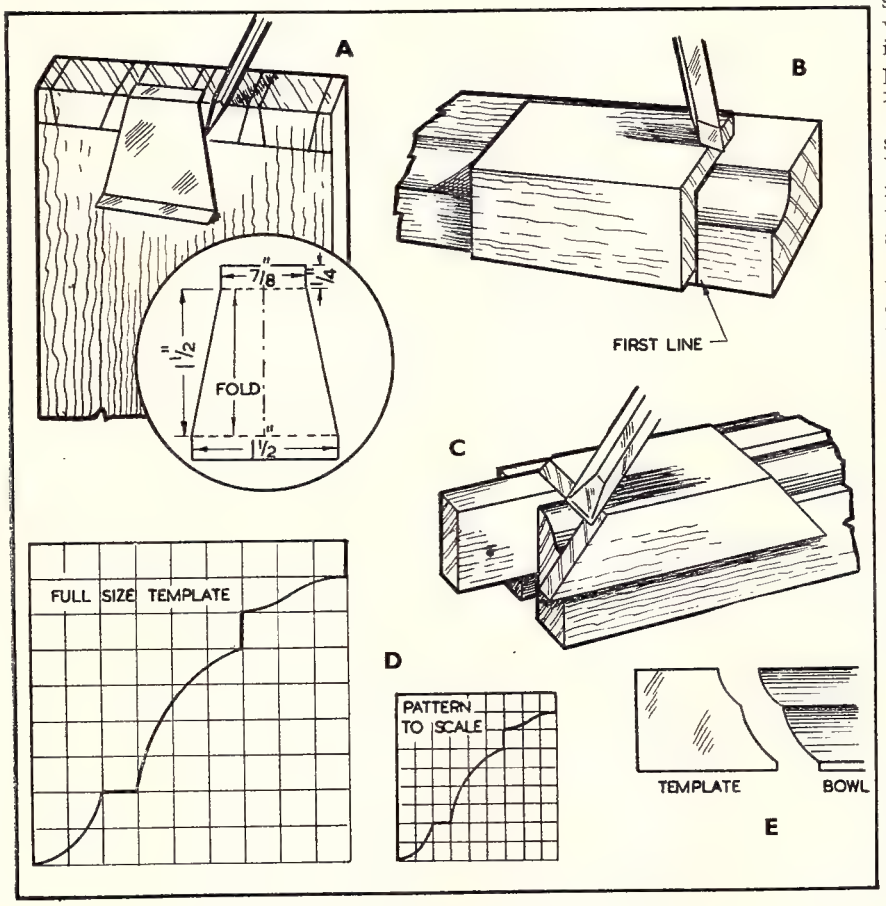


**FIG. 1. EXAMPLES OF VARIOUS TYPES OF TEMPLATES**

**A—Metal dovetail template; B, square for moulded edges; C, mitre template; D, for intricate shapes; E, turned articles**

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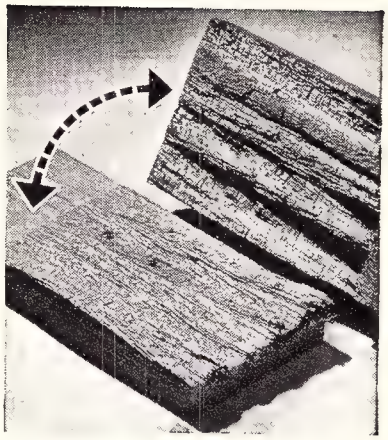

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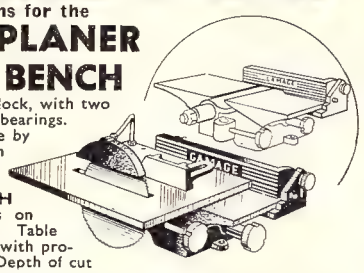

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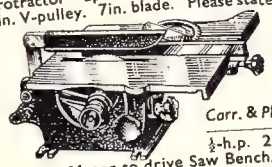

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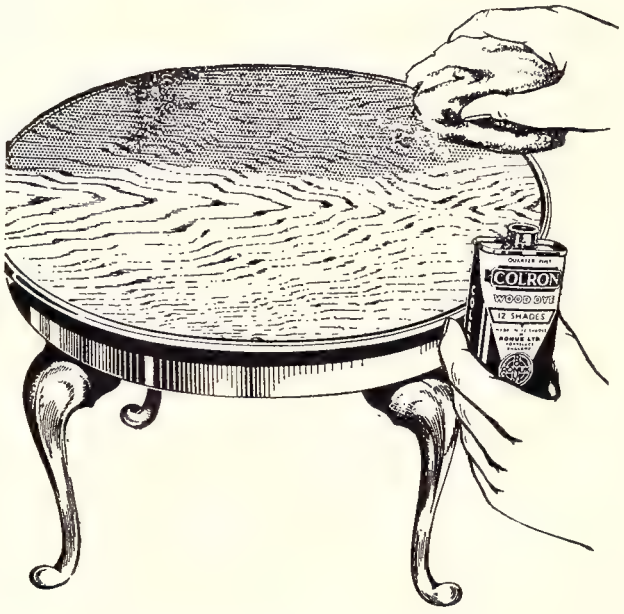


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Often when lathe turning it is useful to make up a template to test your shape as you turn. In this case the template will have to be cut the reverse in shape to the object you are turning. Fig. 1, E, shows the edge of a bowl and the template used for turning it.

Templates are always useful for marking out positions for dowel holes, especially if this method is being adopted for jointing frames. This is a much more accurate method

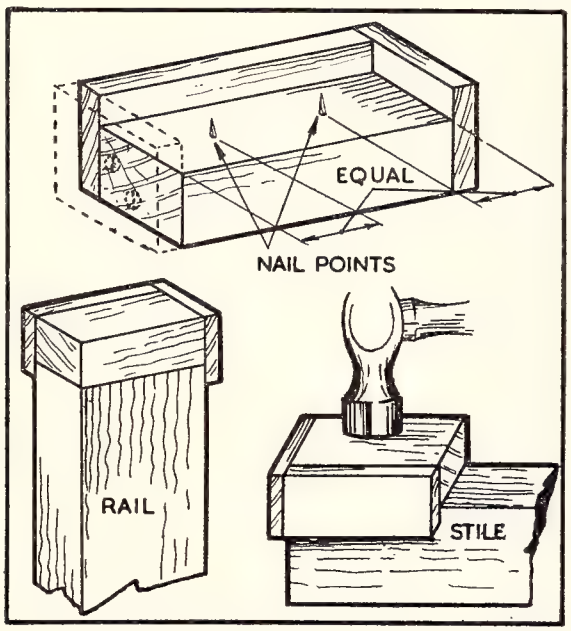



**FIG. 2. TEMPLATE FOR MARKING DOWEL-HOLE CENTRES**

than the obvious method of measuring and gauging. If the principle of this template is grasped by referring to Fig. 2 you should have no difficulty in devising templates for all jobs where accurate dowelling is required. As will be seen, nails, placed at equal distances from the ends, are driven into a hardwood block the same in size as the section of the frame material and filed down to leave points projecting. Pieces of wood, with edges raised above the level of the nail points are screwed to one end and one side of the block. These act as stops when placed against the wood. You must always keep the side stop against the face side of the wood to ensure accuracy. To confirm to this rule the end stop must be transferred from one end of the block to the other when marking the second joint on each stile and rail. The right method is to mark one end of rail and stile first, transfer the end stop, and repeat the marking on the second end of every rail and stile. The sketches of the rail and stile in Fig. 2 show the template in use. A light tap with a hammer or mallet is sufficient to mark the centres for boring.

**Measuring and repetition marking out.**—Due to lack of knowledge of correct methods inaccurate measuring is often the cause of trouble in the assembly stage of a job resulting in an article which is not square or is twisted out of truth. Opposite rails are found to be of different length, one shelf is longer than another, and so on, piling up endless difficulties the causes of which are not always easy to spot.

The commonest inaccuracies are due to using a rule flat on the wood so that you have to peer over the $\frac{1}{8}$ in. deep edge of the rule. Unless your eye is absolutely vertical over the required mark an error will creep in. Maybe this error is only $\frac{1}{64}$ in. but each new measurement increases the error. The correct way is shown in Fig. 3, A. The rule is set on edge so that the rule markings are in contact with the face of the wood. When the measurement is set the square is slid up to the end of the rule with the left hand and held firmly in place. The rule is discarded and the line is marked. This is the only way to ensure absolute accuracy.

If a number of pieces of stuff are to be cut the same length, mark and cut one accurately first and use this as a pattern for marking the rest. By the way, it is wise to write the word pattern on this because, otherwise, by the time you have cut four or five pieces you will not be sure which is the one you are using as a pattern.

Sometimes a number of pieces, such as door stiles, have to be marked out identically for joints. If these are done individually it can lead to inaccuracies. The work is best done in two stages. Cramp a pair of stiles together (with face marks together as a pair) and square off the joint lines. Remove the cramps and set all the stiles together (again pairing up face marks) with the two marked stiles on the outside. Set in a cramp as shown in Fig. 3, B, making sure that the joint markings on the outside stiles are in square line with each other. It is then a simple and speedy matter to draw the joint lines across all the stiles. This method ensures uniformity of measurement.

(*Continued on page* 63)

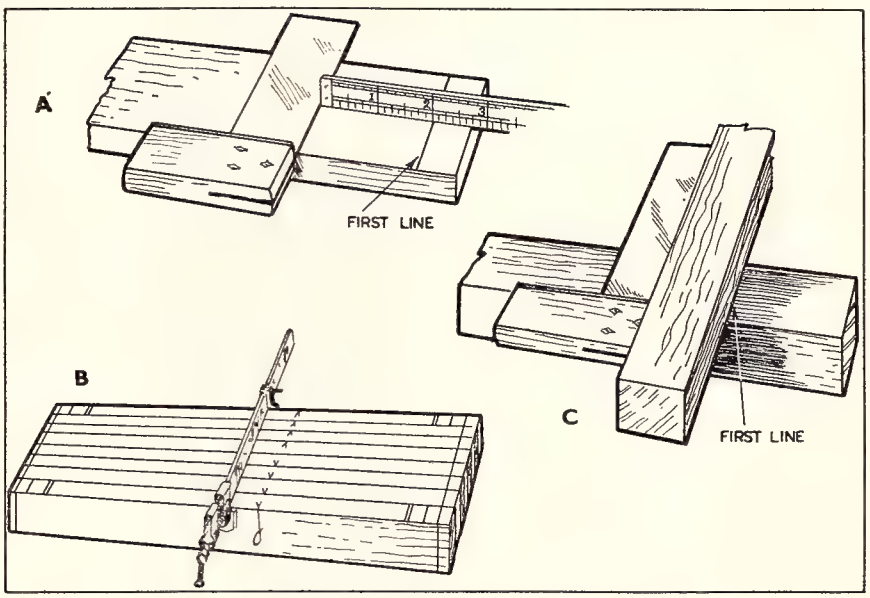



**FIG. 3. MEASURING AND REPETITION**

**Correct method of using the rule, A. B, Marking out sections which are identical with each other. C, Using the material to be joined**

# 1. GENER
# AND MAKIN

By H. OVEREN

*There is something attractive about rustic w*
*out by the homecraftsman, though there are*
*you get down to the actual practical work.*
*whole life in the trade, and passes on the in*
*ex*

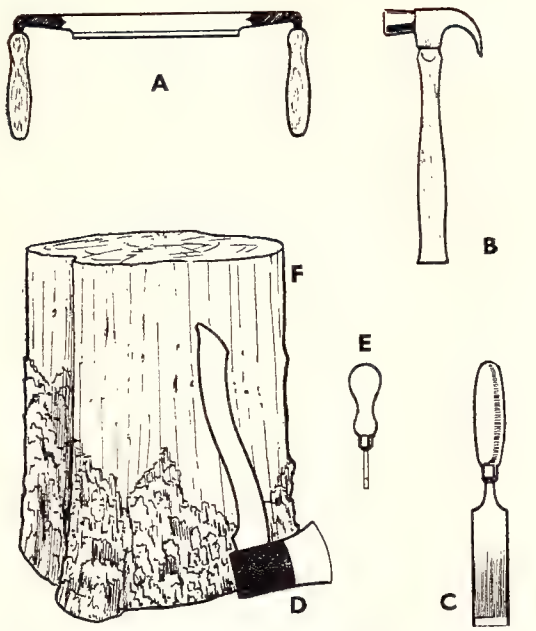



FIG. 1. THE CHIEF TOOLS USED FOR RUSTIC WORK
A. Draw knife. B. Claw hammer. C. 1½ in. chisel. D. Axe. E. Bradawl. F. Chopping block

RUSTIC work made properly can be an attractive feature in any garden. I recommend larch wood. If you find it difficult to obtain this, I suggest ash or chestnut. These woods are ideal for making rustic work.

**Buried butts.**—I advise that the butts which go into the ground be peeled with a draw knife. They should then be charred over a fire. This sends the sap up the wood and will give more durability than creosoting. You should always have the poles 2 ft. in the ground, so peel the poles 2 ft. 6 in. from the thick end, so allowing charring to be 6 in. above ground level. Rotting in any pole begins at ground level. Never concrete rustic poles in, as the spring of the pole loosens the concrete around it and water will seep in between the concrete and pole. Always dig a hole for poles so that when fixing you can put in old rubble and ram well down. This acts as a drainage.

**Peeling.** — If you want to make peeled, stained, and varnished rustic work, a good vice is necessary for holding the wood. The tool you require for peeling wood is called a draw knife which you can buy generally from any ironmonger. Fix the pole firmly in the vice and pull the draw knife along the wood. Make sure you get all the skin of bark off.

**Varnishing.**—The job is made before staining and varnishing, but I give the process straightway. With ash or chestnut wood it is advisable not to leave the job too long in the hot weather as these woods have a tendency to split. When the size and varnish are applied

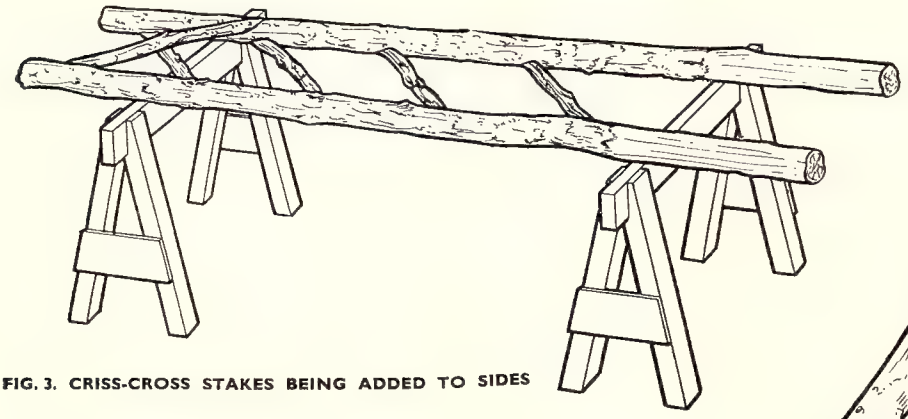


FIG. 3. CRISS-CROSS STAKES BEING ADDED TO SIDES

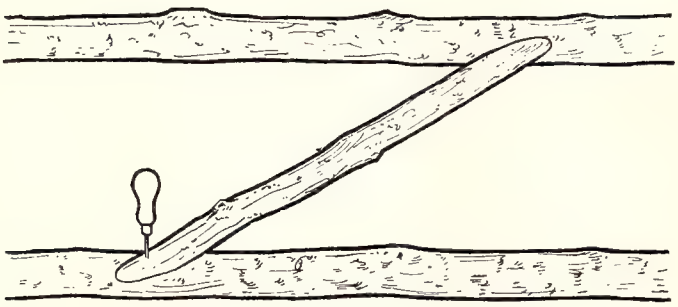


FIG. 5. HOW CRISS-CROSS STAKES ARE NAILED ON

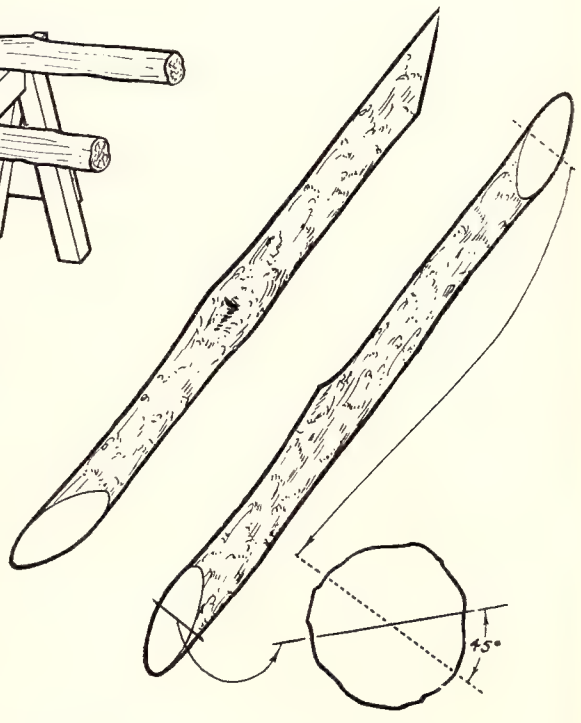



FIG. 4. ANGLE FOR CHOPPING STAKES

this will stop the splitting. To size and varnish the completed rustic work you require concentrated size. Follow the instructions on the packet. To colour the size get some brown umber. The more umber you put with the size the darker the colour will be, so you use your discretion. Apply with a 2½ in. brush and get well into the crevises. Allow the work to dry and then apply a good outside oak varnish. Some firms make a special rustic varnish. The advantage of a peeled, stained, and varnished job, is that it can always be freshened up with a coat of varnish when required.

# AL NOTES
# G AN ARCH

(*Silver Medallist*)

*in a garden. It is work that can be carried tain snags which become obvious only when writer of this series of articles has spent his ation which he has learnt from his practical nce*

If larch wood is used I advise leaving bark on. Unlike ash or chestnut it will not peel off in places in a few years. Cement-coated nails are the best to use. Try to get 13 gauge. These nails when driven in will not pull out easily. For the filling-in stakes use 2 in. nails, and 3 in. and 4 in. for heavier poles. All these are called wire nails.

**Tools.**—The tools you require for making rustic arches and fencing are :—a good claw hammer, weight to suit yourself ; a 1½ in. chisel ; a good axe (I always use a Canadian pattern) ; and a bradawl (which is most important). Use it across the grain of the wood, giving the handle a tap with the hammer. This stops wood from splitting when the nail is knocked home. If you chop your stake on to the framing you will want a good chopping block 18 in. diameter and about 2 ft. high. All the tools are shown in Fig. 1.

## RUSTIC ARCH

**Sides.**—To make a rustic arch such as that in Fig. 2, your first job is to make the sides. Four poles approximately 8 ft. long by 3 in. in diameter are needed. Try to get poles to match in pairs. Fix up two stools about 2 ft. 6 in. high and lay on them two poles facing upwards to match. Depth of sides is 18 in. Cut a temporary stake

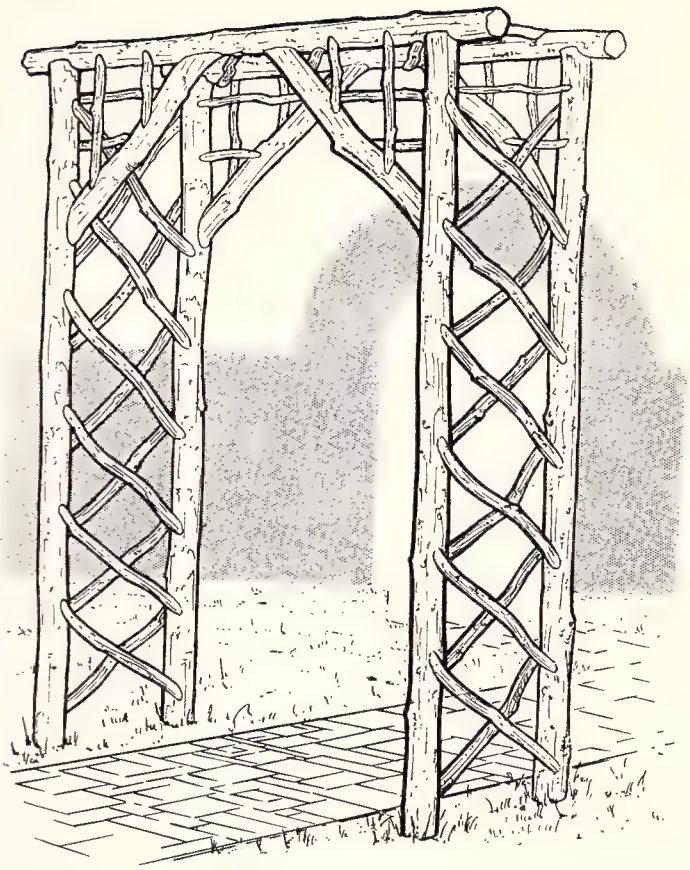


**FIG. 2. RUSTIC ARCH FOR SPANNING A PATH**
**A standard size is 4 ft. wide, 15 in. deep, and 8 ft. high including 20 in. in the earth. Sizes could, of course, be varied to suit circumstances. Twelve criss-cross stakes are shown in each side. The more usual trade practice as described in the article is to have eight**

18 in. long for the bottom of the butt end and a top stake 16 in. long. Touch nail these on the poles making sure that the butts of the poles are in line. Cut off the

(*Continued on page* 64)

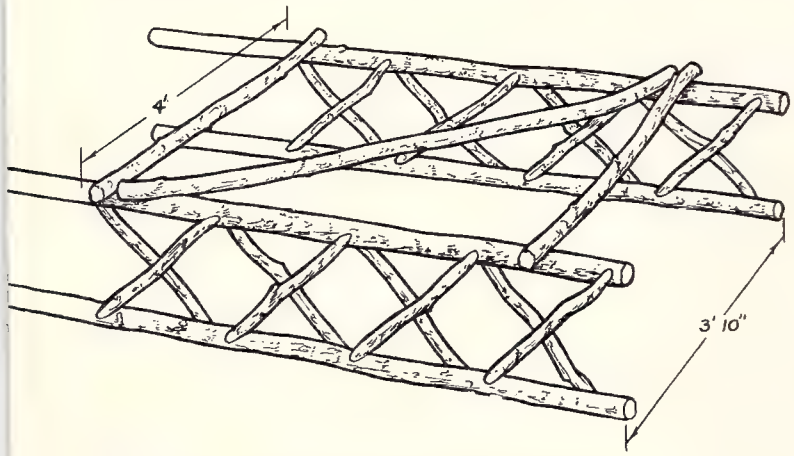



**FIG. 6. SIDES OF ARCH HELD WITH TEMPORARY STAKES**

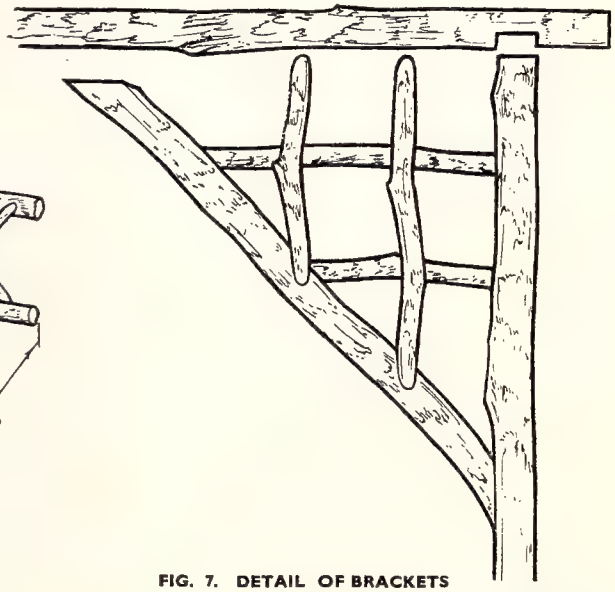


**FIG. 7. DETAIL OF BRACKETS**

# FADDING and COLOURING

YOU have already learned that french polishing is not one of those jobs that you can start and complete in one continuous operation. The various waiting periods between stages are most important and it is risky to cut them below the minimum times we have indicated on the procedure table. Remember that it does nothing but good to make these times even longer.

Of course do not think that in our shop we while this time away by getting out dice or getting our feet up and reading! We need at least half a dozen jobs in hand all at different stages to keep us going. Good organisation and timing smooths the way even for those who usually tackle one thing at a time.

We now discuss the next two stages, fadding and colouring.

**Fadding.**—This is the first stage concerned with the actual building up of the film. It is so called because the fad alone is often used. We use the rubber complete. The aim of fadding is to bring the surface up to a dull glint so that we can finally judge the colour. This is difficult to estimate after filling because the surface is then flat.

Fadding is similar to applying the wash coat. Keep the rubber full and employ long light strokes across then along the grain. Do not use oil. It is sufficient to cover the job three or four times in quick succession. This will bring enough life to the surfaces. Allow four hours hardening time then steel wool the surfaces lightly. Wipe clean with the tack rag or duster.

**Colouring.**—If you have used good veneer or timber and done everything perfectly so far, colouring may be unnecessary. It is likely, however, that some adjustment will be required. The whole job may need darkening or there may be spots or patches which need to be evened up. Colouring is one side of the work which you may find difficult at first. So we shall divide it into toning, evening up, and spotting.

A toner coat is a thin underlying layer of colour over the whole job which we use to darken the shade or or enrich it as required. We prepare the toner coat by dyeing and pigmenting the polish. For a job about dining table size with a walnut finish, for example, we should dilute about one third of a cupful of polish with at least quarter as much meth and mix in a pinch of raw umber and a half teaspoonful of oak spirit stain. This will make the mixture like brown paint but it will be so thin that the grain will show clearly through it. A toner coat is the handiest way of getting uniformity on a job which has not stained well due perhaps to the nature of the timber, or perhaps because different timbers were used. If it were required to partly conceal poor quality wood we should increase the umber content.

The table on toners is meant to be a guide only. We do not use measuring devices. In every case you must find the required shade and density by observation, judgment, and trial. The back of the hand gives a good place for testing by applying a spot with a mop or pencil brush.

Apply the toner coat with a mop or rubber. Speed and uniform coating is the thing just as in staining. If another coat is required give the first one hour to harden otherwise it may lift in patches. If the coat is obviously wrong wipe it off quickly with a meth damped rag but bear in mind that you will not get away with such mistakes too often. On the other hand the colour may be satisfactory but there may be spots here and there which for some reason are light. Prepare a little coloured polish in the same way and touch in with the pencil brush. There may be black spots, perhaps a dark streak or cigarette burn. Use polish and dry colour only so that the mixture is thin but just dense enough to cover completely. If there is a larger area or member needing to be evened up use the dyed and pigmented polish with rubber or mop.

Have some practice and you will soon get the hang of colouring. Get six pieces of scrap obeche plywood. Study the tables given. Give each a different finish going through all the stages up to colouring. When you can do this satisfactorily you are well on the way to mastering the work so far.

In this section we should include oiling. We might use this on a natural or stained job where it was required to bring out the figure, and where no colouring was necessary; also where a plaster type filler had not been used. Dilute raw linseed with a little turps; apply sparingly; rub in and off well; allow over night hardening.

We are told that stale beer used the same way also has the effect of enriching the figure. We have never had the chance to try this. Beer would never be allowed to grow stale in our shop.

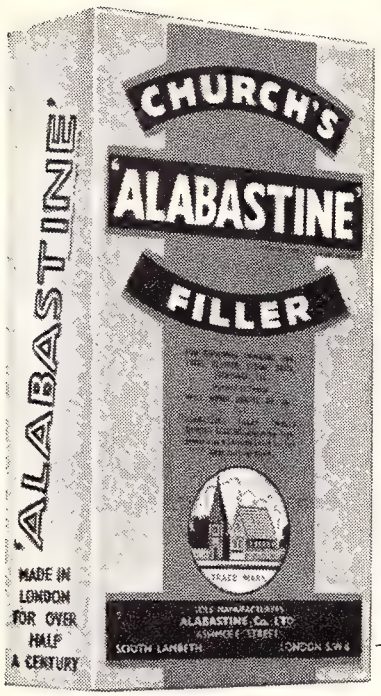
**Handling Abrasives.**—There are right and wrong ways of doing everything; even such an apparently simple job as handling abrasives. If you take a piece of glasspaper, say 4 in. × 3 in., and apply a force of 6 lb. then the pressure on the wood through the paper is

**COLOURING GUIDE**

| Finish | Colour | Toner Coat: Pigment | Toner Coat: Spirit Stain | Polish suggested |
|---|---|---|---|---|
| Walnut | True Brown | Raw Umber | Oak | Button |
| Brown Mahogany | Reddish Brown | Raw Umber | Mahogany | Button |
| Mahogany | Brownish Red | Raw Umber Burnt Sienna | Mahogany | White tinted slightly red |
| Dark Oak | Dark Brown | Burnt Umber | Oak | Garnet |
| Mid Oak | Yellowish Brown | Raw Umber Ochre | Oak | Button |
| Light Oak | Brownish Yellow | Raw Umber Ochre | Oak | White |

**GUIDE TO PROCEDURE**

| Stage | Minimum Waiting Time | Abrasive suggested |
|---|---|---|
| Lay the grain | 1 hour | 5/0 Garnet |
| Stain | Spirit, 1 hour; others 1 day | Nil. Rub over with rag |
| Wash coat | 2 hours | Steel wool No. 0 |
| Fill grain | 1 day | ditto |
| Oil if required | 1 day | Nil |
| Fad | 4 hours | Steel wool No. 0 |
| Colour if necessary | 1 day | ditto |
| Bodying | 1 day | 6/0 Garnet |
| Finish | 1 day before handling | |

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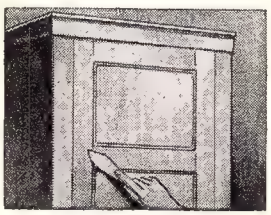

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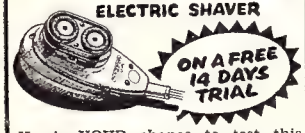


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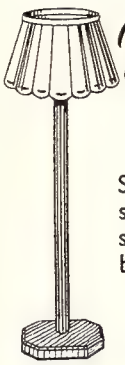

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Use a cork while the job is in the white by all means, but after the finish is started use the fingers. Bear with the length of the fingers and not merely the finger tips. Grip one edge of the paper between the first and second fingers and the other between the third and little finger. For a change grip one edge only between the thumb and first finger. Handling abrasives is one of those tedious but important jobs and there is a definite technique to it.

Do bear lightly with abrasives near edges.

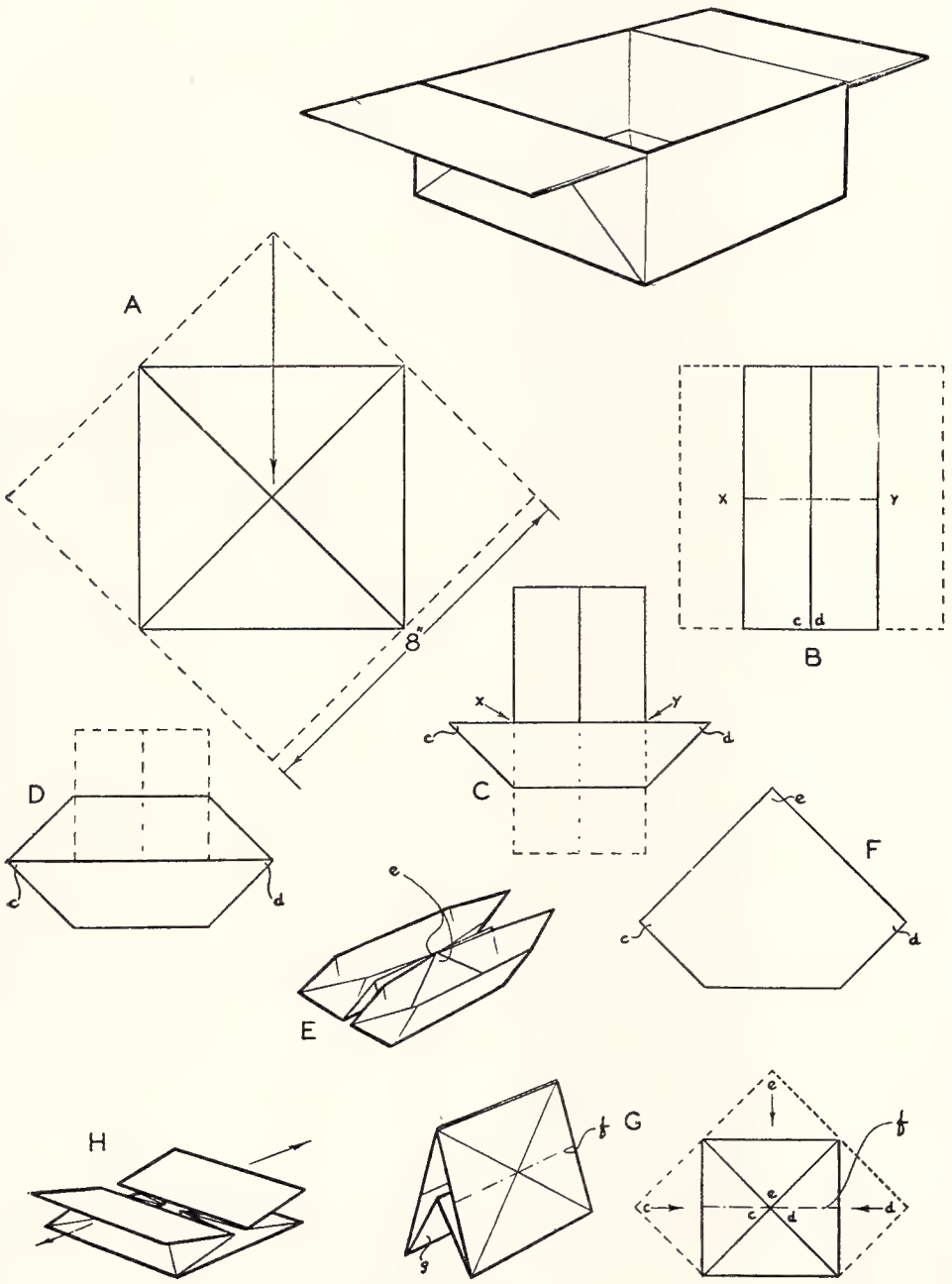
Do practise as suggested on scrap.

Do allow adequate hardening time between stages.

Do, if you get into difficulties, leave the job to harden up then start again.

Don't overpigment when colouring or toning or you get a painted effect.

Don't blow dust into the air. Use the tack rag or a muttoncloth rag. (186)

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**Fine Furniture for the Amateur Cabinet Maker,** by A. W. Marlow. This is one of the best books on the subject we have come across. The author prefaces his work with a brief chapter on carving tools, and passes to seven fairly simple subjects which give practice in wood carving. The main subject of the book then follows, consisting of seven designs based on 18th century furniture — stool with cabriole legs, oval stool, candle stand, walnut mirror frame, paw-foot table, chest of drawers, and tripod table with pie-crust top. Each of these designs is covered very fully, all the stages in the work, and especially the carving, being shown photographically in stages.

The book is obviously the work of a practical man who is passing on his experience to his readers. Those who are interested in making carved period furniture, especially of the 18th century, will find the book extremely useful. It measures 11¼ in. by 9¼ in. and has 200 pages including over 400 photographic illustrations. As it originates in U.S.A. the designs have a new world touch about them, but all 18th century work had much in common in the two countries, and the British reader will find himself entirely at home with the designs. Published at 59s. 6d. by Macmillan Co., 10 South Audley Street, London, W.1

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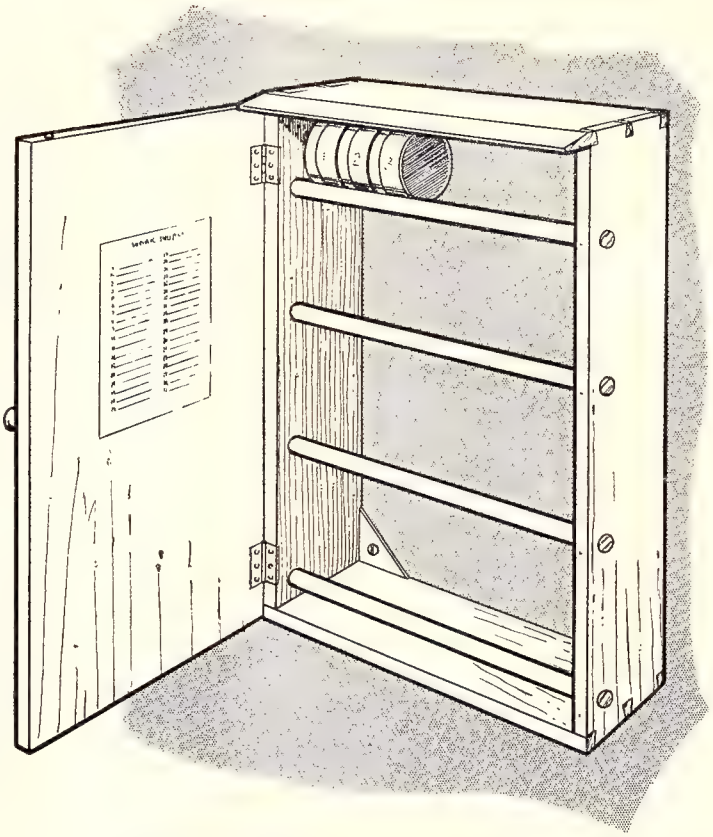


**FIG. 1. THE COMPLETED CABINET SHOWING STORAGE TINS**
**Fitted to the workshop wall the cabinet makes a neat container for accessories**

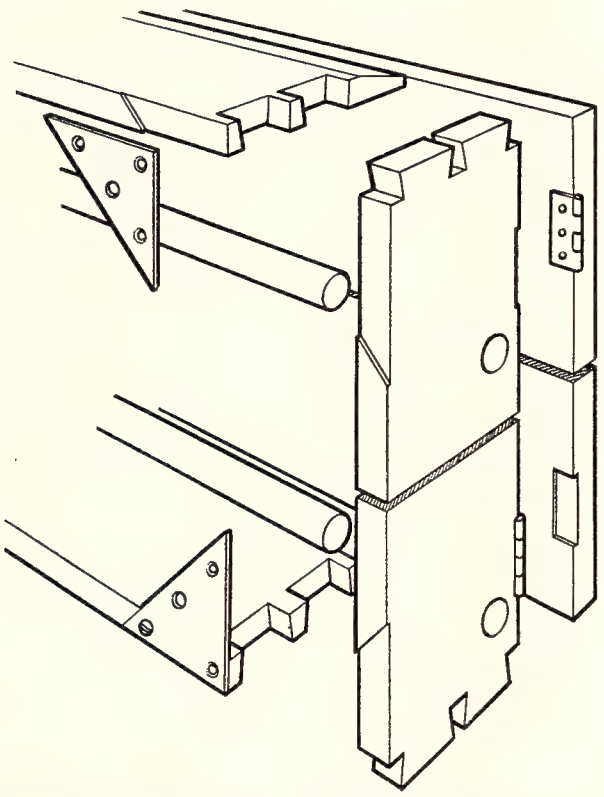


**FIG. 2. DETAIL OF CONSTRUCTION, VIEWED FROM THE REAR**

## CUTTING LIST

To take 32 tins

| | Long ft. in. | Wide in. | Thick in. |
|---|---|---|---|
| Carcase | | | |
| 1 Top .. .. .. | 1 $1\frac{1}{2}$ | $4\frac{1}{4}$ | $\frac{1}{2}$ |
| 1 Bottom .. .. .. | 1 $1\frac{1}{2}$ | $3\frac{1}{4}$ | $\frac{1}{2}$ |
| 2 Sides .. .. .. | 1 6 | $3\frac{1}{4}$ | $\frac{1}{2}$ |
| 4 Dowel Rods .. .. | 1 $1\frac{1}{2}$ | — | $\frac{3}{4}$ |
| 1 Door .. ... .. | 1 $5\frac{1}{2}$ | $13\frac{1}{4}$ | $\frac{1}{2}$ |

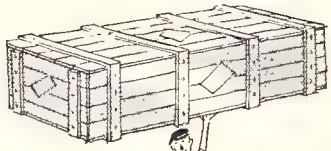
Allowance has been made in lengths and widths. Thicknesses are net. In addition are required two $1\frac{1}{2}$ in. brass butt hinges, one $\frac{1}{4}$ in. ball-catch, brass plate 6 in. by 3 in., one knob.

**Construction.**—The carcase is made from a suitable hardwood dovetailed at the corners, the dimensions being arranged to suit personal requirements. In Fig. 3 the drawing is shown designed to take thirty-two tins. If more are required they can be accommodated by lengthening the rods and top and bottom members, or adding additional rails and lengthening the side piece.

The cabinet is arranged to be secured direct to a wall, the tins taking up a position between the horizontal rod and the wall face. With the rods located as shown, the tins will roll in and out of position quite easily.

No back is necessary as the metal corner brackets act as stiffeners. These are made from two three inch squares of brass cut across the diagonal. Each is drilled to take four fixing screws, three for the cabinet and one for the wall, see Fig. 2 detail.

**Door.**—This can be of 12 mm. plywood or solid stuff.



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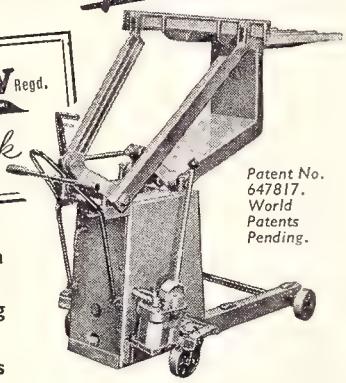

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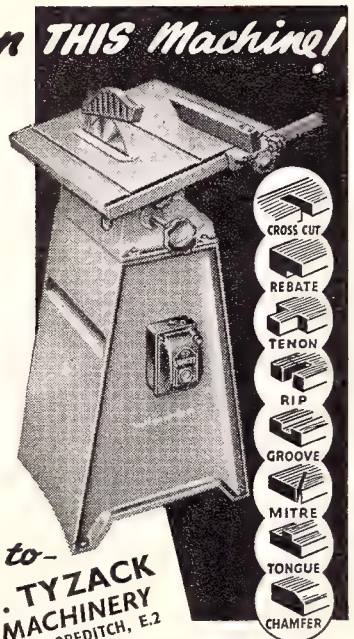


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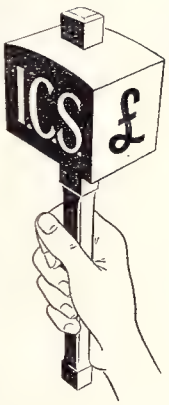


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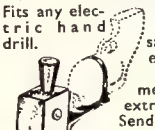

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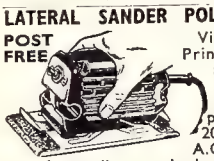

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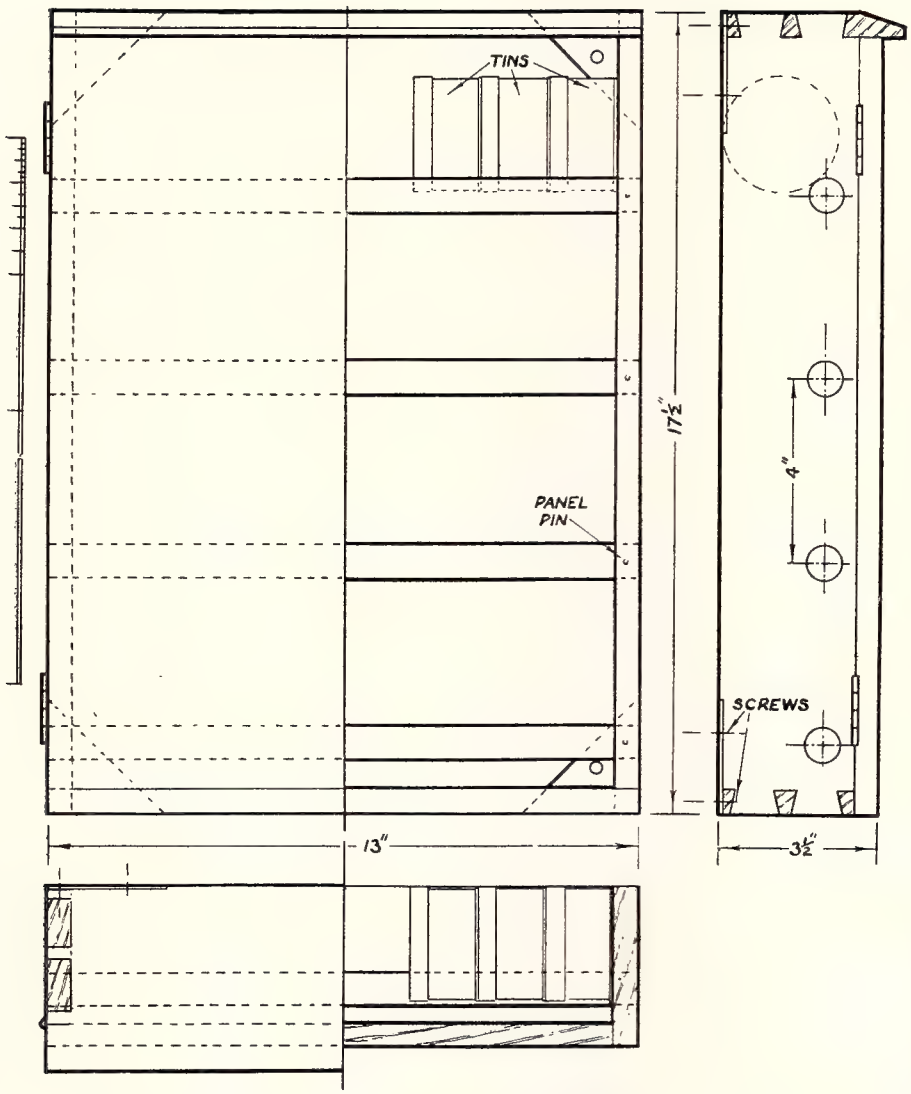


**FIG. 3. ELEVATION, PLAN, AND SECTION**

**The corner plates are cut from two three-inch squares of one-sixteenth brass**

If plywood is used the edges can be lipped to give a better finish. When prepared it is hinged to the carcase with two or more brass butts the flaps of which are let into the carcase and door respectively, as shown in Fig. 2. To hold the door in the closed position a ball-catch is sunk into the top edge, as in Fig. 1, to coincide with a socket made in the top of the carcase.

Marking the tins for identification is done with a centre-punch, each tin being supported on the inside by a wooden block when marking the outline of the number required. (109)

## TEEN-AGER'S BEDROOM

(*Continued from page* 47)

completed ends are connected by six rails. The two top rails (N) are bare-faced tongued to the pilasters (L M). Bottom rails (O) are lap-dovetailed and the mid rails stub-tenoned, Fig. 3.

The front mid rail (P) is wide enough to cover the top edge of the top drawer and is rounded over. Bottom rails and mid rails are grooved along the inner edges to receive stub-tenoned runners (Q). The intermediate drawer runners (R) have rounded fronts and are screwed to front and back pilasters.

**Fall Front.**—The fall front (S) if in good chipboard may not require clamping or lipping. Blockboard or plywood should be clamped as shown, Fig. 3, and veneered afterwards. The fall is hinged to the mid board (T) which butts between the carcase ends and is screwed to rails and runners beneath. The fall is fitted with neat stays and a ball catch. A wood pull or knob is fitted. The drawer fronts may be in solid wood if well seasoned; alternatively, multiply is used lipped along the top edges and veneered, Fig. 3.

**Drawers.**—Drawer fronts are stepped down to cloak the runners (R) and the bottom rail (O). Drawer sides are lap-dovetailed to the backs. Fronts and sides are grooved for the drawer bottoms which are glued in and screwed to the backs at the rear. Rubbed glue blocks are added beneath. Drawer guides are required.

The bottom (Z) of the toilet portion rests upon fillets glued and pinned to rails (N) and end (X), the front fillet forming a stop to the fall front, Fig. 3. The hinged top (U) may be in veneered chipboard or preferably in ½ in. thick plywood clamped and veneered as shown, Fig. 3. The solid wood back piece (Y) to which the top (U) is hinged is tongued to the side pieces (W). Edges should be trued up and finished after all is together and hinged. Fix to carcase with blocks underneath at back and sides screwed two ways. The well portion could have divisions.

**Plinth.**—The plinth is made as for the wardrobe but if both pieces are on a common plinth as shown in the sketch, Fig. 1, a cross rail is slip dovetailed centrally, Fig. 3, and the ½ in. gap between wardrobe and chest filled with a fillet at the front.

The stationery case can be made to suit individual requirements. Suggested are two boxes through-dovetailed together with a central division housed in. A shelf is fitted between the boxes centrally. The plywood or hardboard back is screwed.

Should it be desired to increase the writing height of the fall add ½ in. to 1 in. to the height of the plinth. (192)

# THE QUESTION BOX

*Each query must be accompanied by a stamped addressed envelope.*
*A coupon from back page of cover must be enclosed.*
*Full particulars must be stated, and, if possible, a rough sketch sent.*
*Only problems connected with woodwork can be dealt with.*
*Special designs for individual requirements cannot be prepared.*

**Queries should be addressed to The Editor, WOODWORKER, Montague House, Russell Square, London, W.C.1.**

**MATCHING OAK** *R.J.B. (Hornsey) has made a coal cabinet in oak and oak-faced ply. He wishes to finish it to match some light oak furniture some of which is french polished, and some cellulosed.*

*Reply.*—Wet a scrap piece of oak with water and compare this with the rest of the furniture. If near in shade use white polish. If too light or cold use button (light brown) polish. We think you will need to start with button and finish with white. Possibly a mixture of the two will get the shade required. Experiment a little on scrap first.

1. Raise the grain with water and when dry smooth with No. 0 glasspaper.
2. Apply two thin coats of polish in quick succession. Next day smooth firmly with No. 0 steel wool used firmly along the grain. Remove dust.
3. Fill the grain with *Alabastine*. Use a teaspoonful of raw umber to a saucerful of filler mixing well. Keep the rag wet so that you get the feeling of working with a paste. Pack the pores flush. Clear surface filler as well as possible with fresh rags. Next day rub well with raw linseed thinned with a little white spirit. Wipe off as dry as possible. Remove any surface filler overlooked with steel wool. Allow one day.
4. Build up the film in the usual way. If a very high finish is required for matching burnish when hard with *Supersol* following the directions given. If a semi-gloss finish is needed steel wool firmly in straight strokes along the grain, being careful not to rub through at the edges, and wax lightly, rubbing well. (143)

---

**RUBBING VARNISH** *G.I. (Bexley) is using a rubbing varnish and inquires whether carbide of silicon paper is ordinary wet-dry paper. He also asks how to get a velvety sheen.*

*Reply.*—The carbide of silicon abrasive paper mentioned in the November issue is not the ordinary wet-or-dry paper of the painting trade, although it could be so called. Its main use, however, and its greatest value, is when it is used in water. The cutting agent is quite different in appearance from the house painter's variety. Grade 280C or even finer, should be used for finishing prior to the burnishing process. Cutting down should be done carefully and evenly, using a little soap as a lubricant. Rinsing must be thorough.

In the case of certain lacquers and varnishes only a pleasant sheen can be obtained, against the brilliant gloss obtainable with others. *Universal Medium* is a high-grade material which can be used for a variety of purposes—hence its name. After finishing the cutting down stage with the finest paper, a polishing liquid should be used, with some vigour at first, the final gloss being got with a clean cloth.

The kind of polish to use is one which does not *apply* a polish, but makes one. By this we mean that a wax polish is not necessarily the right one, although in the case of needing a sheen only, it might be used with success. Some car polishes fit the case, particularly those used by car sprayers. Some metal polishes are quite good. (120)

---

**WOOD FLOORING** *J.M. (Kidderminster) wishes to lay a wood floor over a concrete sub-floor and asks general advice. The room is 50 ft. by 30 ft.*

*Reply.*—There is no doubt that the best job will be 9 in. by 3 in. by 1 in. herring bone pattern block flooring laid with one of the several brands of bituminous adhesives. The floor when laid should be dressed off with a rotary sander machine (this being hired out for the purpose). Any reputable timber firm can supply the material and your specification is as follows: approximately 1,500 super ft. of 9 in. by 3 in. by 1 in. hardwood herring bone block flooring, ready for laying, properly seasoned, and of prime quality, rock maple or similar, with moisture content of not more than 15 per cent. Get several estimates and compare what is offered before purchasing. Cold adhesive is supplied by various firms each giving directions for using.

In laying, it is essential to start by stretching a line down the centre of floor and working outwards, checking the line of the pattern occasionally. What you cannot do is to start in several places at once as this will create a general muddle that cannot be rectified. Two rows of blocks laid around the skirtings first will form a border, the herring bone pattern being cut to meet this border neatly. Your concrete sub floor is ideal for this type of floor and will make a job that will give hard wearing service for many years. (98)

---

**LAYING STRIP OVERLAY FLOOR** *C.J.L. (Plymouth) wishes to lay a strip floor in a new house which has T. and G. softwood flooring. He asks whether he should wait for a while before laying, and also a number of technical points which are covered by the following reply.*

*Reply.*—We strongly advise waiting until after the summer if possible as every new building must contain residual moisture including the wood floors. Usually the floorboards in a new house are tightly compressed in the joints. As the job dries out the joints will slacken and show a small shrinkage and this will be a reliable guide as to dryness. If you buy your flooring strips from a reliable firm and stipulate a moisture content of not more than 15 per cent you should have no difficulties provided the material is stored within the house. As you desire to secret nail, we suggest laying across the sub floor as this is more likely to eliminate creaking. As you are using T. & G. strip there is no need for adhesives. Wedge up as you fix each strip. No allowances are needed.

A border is a matter of choice. Usually strip will look quite well without a border. Usually a small fillet is fixed around the skirting to neaten off. No cork is necessary at the edge to allow for movement. After preparing the finished floor, bring it to the desired colour with stain. Lightly rub down with glasspaper and apply a generous fad of french polish. Rub this down when dry and if a wax finish is desired, use one of the non-slip varieties, sparingly.

For materials, the best plan is to make inquiries from several local firms, specifying exactly your requirements and compare results. Any reputable firm will guarantee the moisture content and this is the important point. (179)

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**RAW AND BOILED LINSEED OIL** *P.S. (Hooke) asks how to recognise boiled oil compared with raw. Also which is preferable for finishing oak.*

*Reply.*—Raw linseed oil of the commercial grade is of a pale yellow colour. When boiled alone or with litharge or other drying agent it takes on a slightly darker tone, somewhat brownish. Looked at through the light it should not be difficult to distinguish between the two. Raw oil which has been exposed to the light for a considerable time loses much of its colour and eventually bleaches almost water-white. In this state, if its history is unknown, it should be subjected to severe drying tests before being used, lest it be something in the nature of a mineral oil. Boiled oil dries much quicker than raw oil. A simple test would be to smear a little of each on a piece of glass placed dead flat and away from the dust. Test for drying from day to day. Raw oil may take many days before it becomes tacky whereas boiled oil may dry in a day or so. If you were familiar with the characteristic odour you would be able to tell at the first examination; that of raw oil is peculiarly sweet and rather unpleasant while the other is somewhat more pungent.

While we hold no brief for the method, either grade may be used for finishing oak; about 10 per cent of turpentine or white spirit should be added. If raw oil is used it should be allowed to simmer for a short time over a stove before the thinners are added; do not leave it unattended on the stove and take the pot off first. Many applications and much hard work over a period are necessary before a gloss appears. (174)

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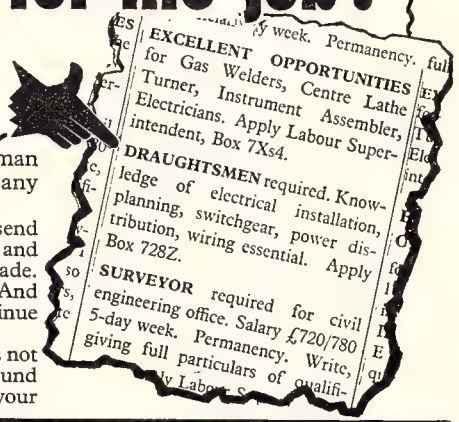
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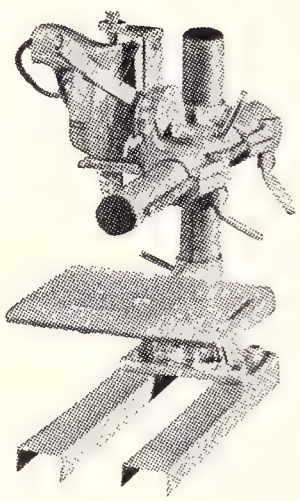

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# REPLIES TO READERS' QUERIES

**STAINING MAHOGANY TO OAK** *G.R.H. (Crewe) has a mahogany suite with carved detail which he wishes to finish to match dark oak.*

*Reply.*—Mahogany and oak are nearly impossible to match precisely because of the different figures and natural colours. However you will get them as near as is possible as follows:

*Stripping.* Use a non-caustic proprietary stripper. Follow the directions given on the container. For a final clean-up and on the difficult portions use a nail-brush dipped in the stripper. Before staining smooth with No. 1 glasspaper and No. 2 steel wool.

*Staining.* Dissolve a heaped teaspoonful of bichromate of potash in a ½ pint of hot water. Stain the suite with this. When dry wipe the brown dust off the surface and repeat once. Test the same stain on the oak and adjust with water if necessary so as to get the same tone as near as you can to that on the suite.

*Colouring.* Use garnet (dark brown) french polish which must be of trade quality. Mix a cupful of 50/50 polish and spirit. Stir in as much burnt umber dry earth powder as will load a sixpence. Use a fine mop to apply one thin uniform coat. This will bring both jobs to an even dark brown. Both should be done at the same time. It may be necessary to give one or the other or both a further thin coat. This must be done quickly and not until the first is hard (minimum 1 hour). It is a question then of finishing in the usual way using garnet polish and preferably completing the bodying and finishing with button polish. (135)

---

**FINISHING PLYWOOD AND PINE** *R.O.T. (West Hartlepool): "I wish to stain and polish a chest of drawers. Parts are in softwood; others in plywood. Portions are wood from which paint has been stripped."*

*Reply.*—Put two teaspoonfuls of size in a ½ pint of water. Bring to near boiling, stir well, and brush on one coat. Next day sand smooth with a cork and No. 1. Do not miss any part that has been sized or the stain will not take uniformly. Simmer a heaped teaspoonful of walnut crystals for ten minutes in a ½ pint of water. Strain off, test, and adjust if necessary to get a mid-brown. Add a teaspoonful of ammonia. Apply quickly with a rag wiping out evenly with another rag held in the other hand. Next day rub firmly with a fresh rag.

Prepare a ½ cupful of 50/50 polish and meth. Mix in enough raw umber to load a 6d. Apply one thin even coat. Allow two hours. A further coat—perhaps a weaker one may be necessary to get an even tone. This will be walnut (true brown). Next day give it four thin even coats of button polish. Work quickly in warm conditions. A day later smooth carefully with No. 1 steel wool. Be careful at edges. You could then complete the finish using a rubber.

The precaution with old stripped wood is to begin by wiping over with finish medium, in this case meth. If there is no reaction—that is if there is no staining effect produced—then there will be none later when it could ruin the work. (141)

---

**STAINING AND POLISHING BOWLS-"WOODS"** *D.J.M.E. (Slough) asks advice regarding the renotion of bowls with ivory insets.*

*Reply.*—1. Clean up the insets with water and No. 400 silicon-carbide paper finishing with *Brasso*. Rub over the wood with No. 2 steel wool. Cover over the insets exactly with masking tape.

2. Stain the wood with a rag and indian ink of the type used by draughtsmen. Allow two hours.

3. Dissolve a ¼ teaspoonful of spirit-soluble aniline black in a tablespoonful of methylated spirit. Mix into a ½ cupful of transparent or white french polish. Dilute the whole with half as much spirit. Apply two or three thin coats with a fine mop. For a set-up you could have the inset bearing on the true end of a slightly smaller diameter tube held upright in a vice and a steady for the top end terminating in a needle stuck a little way into the wood.

4. When hard smooth with No. 0 steel wool and wax lightly and well with a good hard wax such as car wax. (137)


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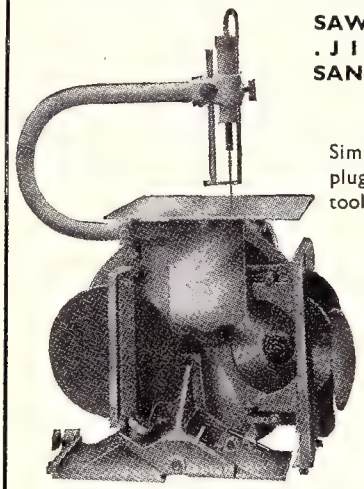

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# REPLIES TO READERS' QUERIES

**WATERPROOFING WOODEN SHED** *I.J.N. (Washington) has a wood shed on a concrete base. It has been creosoted three times, but he finds that it becomes wet in bad weather, the wood soaking up the water.*

*Reply.*—The only thing you could do to the outside of your shed is to give it a coat of bituminous paint; ordinary paint would not do over creosote. Tar and pitch, applied hot, would probably be more effective, and much cheaper; farm buildings protected in this fashion last for centuries. The tar is heated (preferably in the open air, lest it boils over and catches fire) and the pitch broken up small and stirred in until it is all dissolved. The proportions are roughly 1 lb. pitch to half a bucket of tar. A gas ring could be used *provided it is not left unattended for one second.*

As the boards are not entirely close-fitting they would not exclude the damp air, and some form of lining could not fail to be of advantage. A "Rubberoid" type of felt would do admirably but there is the danger of its being easily torn. Hardboard would be ideal, but before fixing the back should be coated with whatever preparation you decide upon for the outside. (175)

**OAK FLOOR** *K.B. (Birmingham) wishes to finish a floor to match oak furniture.*

*Reply.*—Your first step would be to thoroughly scrub the floor to remove any dirt or stains left by the builders, particular attention being given to paint and distemper spots. When dry, the raised grain should be smoothed with medium grade glasspaper. Avoid anything in the nature of a varnish stain or any stain which does not give deep penetration. We recommend an oil stain followed by waxing. For greater durability give a coat or two of synthetic lacquer before waxing. To make the stain take 3 parts of raw linseed oil and one part cheap oil varnish (not spirit varnish). To this add an appropriate colour (ground in oil) to tone with the oak.

You do not tell us the colour of the oak you wish to imitate, so we can only give you a range of colours from which you can get any tone you desire. For light or natural oak try raw sienna, burnt umber, and perhaps a touch of blue or black. For darker oaks use a mixture of burnt sienna and black. First decide which colours to use and then make up a stock solution with a little oil to a pouring consistency; then add to the oil mixture (a pint should do a fair-sized room) drop by drop until you get the tone you want. Apply with a brush or swab and even out with another swab. Allow to harden for a day or so and then wax polish. If expense will allow, apply a coat of half lacquer and half white spirit with a rag, wiping off all surplus. After 8 hours apply a coat of neat lacquer with a brush. Both these coats must be given before waxing. Use a quick and hard drying lacquer. (167)

**ROOF SNOW GUARDS** *I.J. (Accrington) wishes to make a roof snow guard to prevent snow from falling bodily on to the glass roof of an outhouse.*

*Reply.*—These are generally made of galvanised iron wire mesh supported upon purpose-made iron brackets fixed to the lower ends of the rafters, most likely on the sides. They are shaped to bring the projecting portion upright. To these uprights the wire guards are fixed securely, the brackets being spaced approximately every three feet according to the rafter spacing. It is essential that all materials are protected against weather, consequently timber is not used generally. The fixing will entail the removal of the tiling or roof covering, and this and its replacement is rather a skilled job. In your case it may be possible to design the brackets so that a fixing is obtained down the face of the wall. This would save removing the roof covering, but a good fixing is essential. (96)

**ROOM PARTITION** *N.G. (Mirfield) has to divide a bedroom and asks the size timbers to use for the framework.*

*Reply.*—Use 4 in. by 2 in. timber for studs and main framing, with 4 in. by 1 in. for nogging. Make the partition 4 in. thick. Use hardboard for cladding with studs at 18 in. centres. For top glazing the framing can be dressed off and beads applied to secure the glass, the latter being bedded in putty. In fixing the new door frame you must clear the opening to suit the required position of door. Set up the frame and build out and make good to the old work. If the dimension of the new door is not of great importance much cost and labour is saved by locating the exact position of studs and cutting neat to this size, making the frame to suit. The architraves will then neaten off all plaster edges. (127)

**CLEANING TEAK** *R.F. (Dublin) has an old carved bureau. The front is dirty and he wishes to clean it.*

*Reply.*—Green soft soap is a good cleaner for dirty furniture. Soak a rag in hot water, put a blob of soap in the middle, and fold into pad shape. Rub each surface using a circular motion until it is covered with lather then remove with tepid water. A long bristled brush dipped in a warm green soap and water solution would be suitable for the carvings. Remove lather and loosened dirt with the same brush washed out and dipped in plain water. After thorough drying and repeating if necessary rub the surfaces over well along the grain where possible with a fresh hessian rag. You could then wax lightly with a good wax such as that obtainable from most antique dealers. Brush on a very thin coat. Next day polish with fresh cotton rags. Thereafter the regular dusting, etc., and waxing every year or so will in time produce a fine patina. (185)

**TIMBER FOR CONCRETE MOULDS** *R.A.J. (Bournemouth) asks the best timber to use. He has had trouble owing to the warping of the boards.*

*Reply.*—Yellow deal is a good timber for the purpose, probably one of the best. See that the timber is prime, all heartwood being cut out, and good construction used in the making of the moulds. From your letter we are inclined to think sufficient attention is not being given to the maintenance of moulds. Damp is always an enemy to timber and we take it you have treated your moulds to make them secure in this respect. Since we feel your trouble lies in the treatment of the moulds rather than the quality of timber, we suggest that you get in touch with one of the paint manufacturing firms who no doubt will be of assistance with suggestions for preservatives. (180)

**STAINING PINE TO OAK** *H.B.L. (Reading) is making a desk using parana pine, ply, and other softwood, and wishes to stain and finish it to medium oak. He has tried an oak stain before and has found that it tends to remain sticky or greasy.*

*Reply.*—1. Put two teaspoonsful of clear size in a ½ pint of water. Bring to nearly boiling, stir well, and brush on one coat. Allow one day.

2. Sand smooth with No. 1 using a cork and working along the grain. Do not miss any part of the sized surface or the stain will not take evenly. Remove dust.

3. Simmer a heaped teaspoonful of walnut crystals in a ½ pint of water for ten minutes. Strain through muslin. Adjust if necessary to get a mid-brown. Add a dash of ammonia. Apply with a rag well wet in the stain. Wipe out immediately with a dry rag held in the other hand. Allow one day.

4. Mix enough raw umber to load a 6d. into a ½ cupful of 50/50 button polish/meth.; also a teaspoonful of oak spirit stain. Apply one thin even coat. Allow two hours. Another thin coat may then be required or perhaps evening up of certain members to get the right tone.

5. The above is the main part of the work. Next day start building up the film by your usual method. For an abrasive use No. 1 steel wool. Be careful not to bare edges. When the build is adequate complete by waxing very sparingly, rubbing well.

We get the impression that your "permanent stain" is a varnish stain. Never use such stains for furniture. If you propose to finish bright you should fill the ply. When the water stain is dry apply one thin coat of polish to the whole job. One hour later fill the grain of the ply using a mid-oak filler. Next day proceed as at (3). Spirit stain or dye is suitable. It is most difficult to handle on softwood and not so selective as water stain—that is it does not bring out the figure so well. (142)

HANDICRAFT TEACHERS' PAGE

# OCCASIONAL TABLE

*Although designed primarily for construction by boys in a school handicraft centre, this delightful occasional table is an ideal job for the home craftsman*

In order to make this series interesting, varied, and useful to all handicraft teachers we invite teachers to send in designs which they have found successful in their work. A fee of 2 guineas will be paid for any original design published. Dimensioned pencil sketches with notes describing construction should be sent. A photograph, if available, would be of added help. All photographs will be returned. Designs should be in contemporary style—simple and clean in line and suitable for the average boy to make. The name of successful entrants can be published with the designs—if desired.

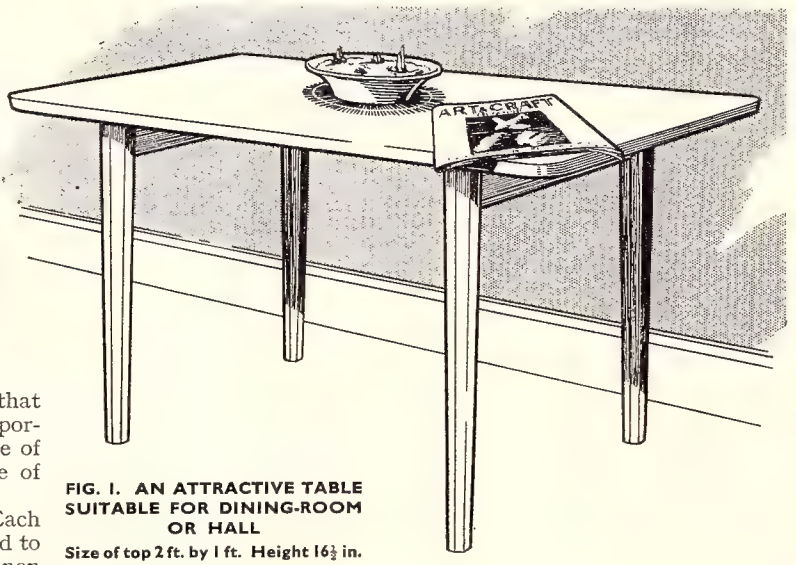


**FIG. 1. AN ATTRACTIVE TABLE SUITABLE FOR DINING-ROOM OR HALL**

**Size of top 2 ft. by 1 ft. Height 16½ in. approx.**

THE advantages of this design are that it is contemporary in style and proportions, can be made without the use of the lathe, and is economical in the use of timber.

**Construction of End Frames.**—Each pair of octagonal tapered legs is connected to a cross rail with haunched mortise and tenon joints as shown in the inset sketch, Fig. 3A. The rails are ½ in. thick but if a teacher feels that, for some boys, the tenons will be more satisfactorily cut in thicker wood ⅝ in. material can be used. In the latter case the shoulders on each rail should be chamfered to meet the angles on the legs.

The joints will be satisfactory when held with glue alone if the tenons are a reasonable fit in the mortises. Added strength can be given, however, by pinning them with ¼ in. dowels driven through the legs.

The joints are made while the legs are in the square. The first stage in shaping the legs is to taper them on the four sides while still in the square, remembering not to run the taper on the inside face through the joint. This will make the work of jointing simpler as square shoulders can be retained on the rails.

The octagons should be marked on the ends of the legs by the method shown in Fig. 3B. The corners are planed off to form the octagonal shape.

**Cross Rail.**—This is held to the end rails by means of a through mortise and tenon joint which can be wedged or pinned to give extra security.

**Metal Buttons.**—These can be made from odd pieces of brass, copper, or aluminium, and are shown slotted to allow for movements in the top. Circular drilled holes would serve if a stable material such as plywood or veneered block

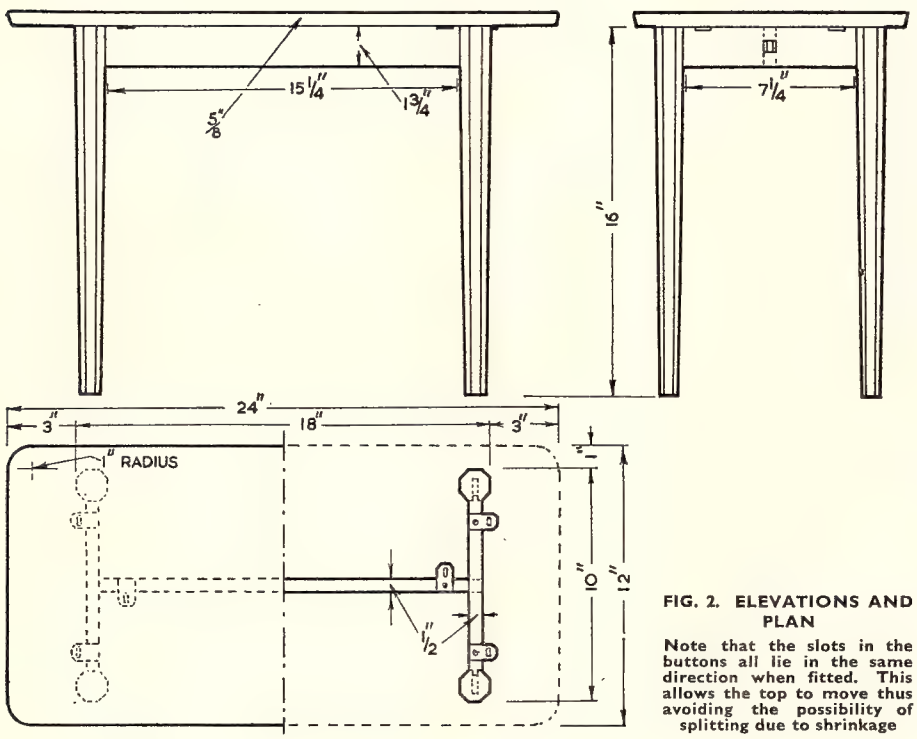


**FIG. 2. ELEVATIONS AND PLAN**

**Note that the slots in the buttons all lie in the same direction when fitted. This allows the top to move thus avoiding the possibility of splitting due to shrinkage**

or chip board is used. Grooves are cut in the top edges of the rails before assembly to accommodate the buttons as in Fig. 3A.

**Assembly.**—Clean up the parts and glue the end frames together. Allow to set and glue in the cross rail, using a cramp to set the frame square. When dry remove the cramp and level the top edges of the frame. Screw the metal buttons into position on the rails.

**Top.**—Select a suitable piece of $\frac{5}{8}$ in. stuff and square it up to a true rectangle. If no 12 in. material is available two pieces may be jointed with a rubbed joint. Next round the corners of the top with chisel and spokeshave to the radius shown in the drawing. At this stage the moulded edge, Fig 3C is worked. Make the bevel first, using a steel smoothing or jack plane, on the ends and sides. The rounded corners are done with a spokeshave. The small round on the top edge is done with a smoothing plane along the straight edges and with the spokeshave on the curves.

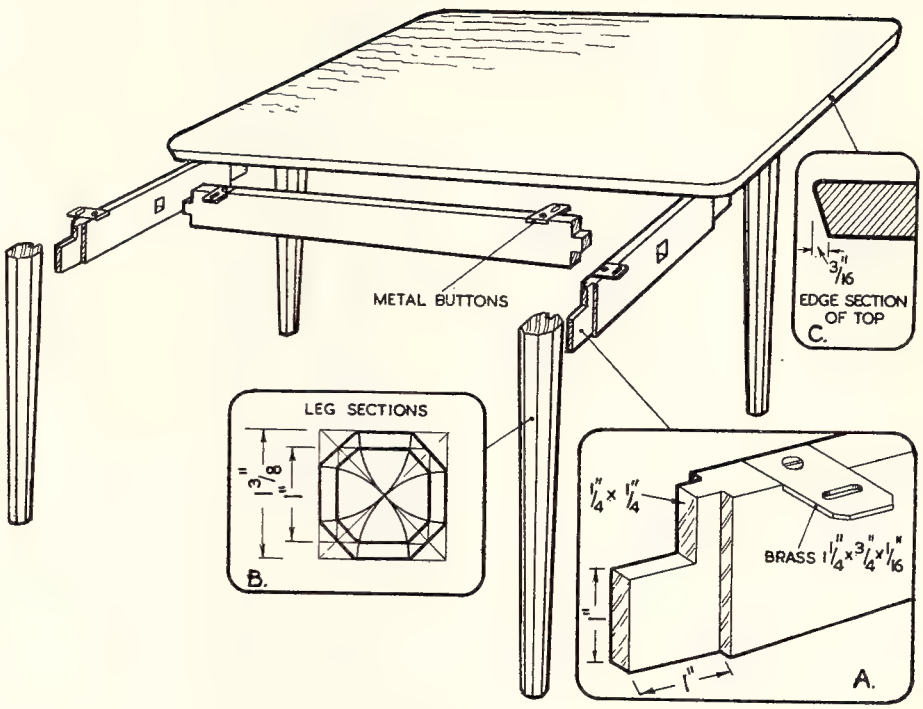


**FIG. 3. DETAIL OF CONSTRUCTION**

**Inset A shows dimensions of haunched tenon and button. B is method used to work out octagonal leg. If a true octagonal taper is required diagonal lines are drawn from the corners of the large octagon to pass through the centre. Parts for a true octagon will be found where each line cuts across the smaller square. C, detail of moulded edge**

Clean up the surface of the top and finish top and edges with glasspaper.

**Finishing.**—Lay the top upside down and set the frame in its correct position on it. Screw the two together through the metal buttons. Test the legs for levenness on a flat surface and trim the ends where necessary.

The table may be oiled and burnished or waxed following two coats of white polish according to the wood used.

## CUTTING LIST

| | Long ft. in. | Wide in. | Thick in. |
|---|---|---|---|
| 4 legs .. .. .. | 1 4½ | | 1⅜ sq. |
| 2 end rails .. .. | 10 | 2 | ½ |
| 1 cross rail .. .. | 1 6 | 2 | ½ |
| 1 top .. .. .. | 2 0½ | 12¼ | ⅝ |
| 6 metal buttons .. .. | 1¼ | ¾ | 1/16 |

Allowance for working has been made in lengths and widths. Thicknesses are net. (187)

## MARKING OUT

(*continued from page* 53)

**Avoid using rule where possible.**—After all that has been said above about the need for care in measuring the sub-heading to this paragraph may cause some readers to think that it is there by mistake. That is not so, however. I often feel that one of the distinguishing differences between the first class craftsman and the mediocre one is that the former uses the rule as little as possible while the latter runs to it on every occasion! The reasons are these. Every time you use a rule there is a chance of error. When you measure, say $\frac{5}{16}$ in., it may appear to be that but could easily be $\frac{1}{64}$ in. out one way or the other without your realising it. Now if you measure the width of one piece of wood (say a rail of a door) to mark the same width on another (say a stile) you have used the rule twice and so *may* have doubled the error. A simple rule for craftsmen is "Whenever possible use the wood you are going to use to measure with."

An illustration of this is shown in Fig. 3, C. In marking out a cross halving joint mark the line for one side of the joint first. Next lay the piece of wood to be fitted in up to the line and with the left hand bring the try square up to the other edge. Remove the wood and mark the second line along the edge of the square. By this method you will be sure of perfect accuracy. This principle can be used for most joints.

**Conclusion.**—It has obviously been impossible to cover every individual case and method of marking out wood for constructional work but I feel that a wide enough range of methods has been quoted for the keen craftsman to start thinking on the right lines and to adapt the principles given to cover the special problems he comes across in his own work. (102)

---

An old workshop saying worth remembering is: "measure twice and cut once". The moral is obvious.

---

Do not pile tools on top of each other on the bench. The edges are easily damaged.

# CONVERTING OLD FILES TO CHISELS

*A reader has sent us the following details of how old files were put to a practical use by converting them to chisels. The quality of chisel produced depends, of course, on the careful annealing of the original metal and its subsequent retempering. The reader passes on his experience for the benefit of those who might like to try their hand at this interesting process*

THE small bevelled edge chisel (Fig. 1, B) was made from the three-cornered file shown, the file first being annealed by bringing it to a red heat, then burying it in fine ashes overnight to exclude air and ensure slow cooling. The top corner was filed to a flat surface as shown in the sectional view, and the teeth removed from all surfaces. The neck of the chisel was filed to shape, a collar being left just below the tang, as shown. Finally, the grinding bevel was filed on before the metal was retempered.

In the process of annealing, the metal tends to become distorted, a slight curve developing along the length. This is rectified before tempering, by heating up and lightly hammering the convex side on a slightly concave surface.

**Tempering.**—For this process the blade should be brought to roughly a dull red heat (it is safer to underheat than to overheat), then entirely quenched in water. This makes it dead hard. After the whole blade has been rubbed bright with emery cloth, it is laid on a hot plate with the tang end on the hottest part, and the cutting edge slightly overhanging. (The hot plate may consist of the top of an ordinary domestic coal stove or inverted electric or gas iron.) The colours are now watched as they slowly traverse the blade—clear daylight is necessary—and as soon as the first colour, which is light straw, has deepened to brown on the area of the cutting edge the blade is quenched out by plunging it into cold water.

Files are, of necessity, made from the finest carbon steel and a chisel made from one will take a superb cutting edge. The degree of sharpness possible, however, is largely determined by the smoothness of the flat face of the chisel. The face should be honed down dead smooth and flat before the handle is fitted and the cutting edge finally set up. (982)

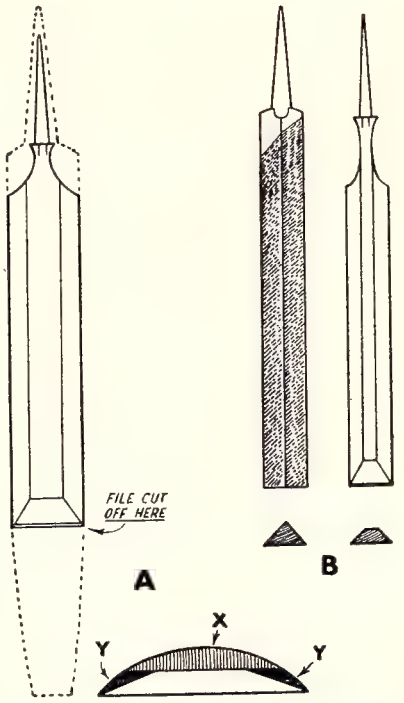


**FIG. 1. SHAPING HALF-ROUND AND THREE-CORNERED FILES**

**The dotted line (A) indicates the outline of a half-round file, (X) and (Y) the areas to be removed. At (B) is shown how the triangular file is dealt with**

## RUSTIC WORK

(*Continued from page* 55)

criss-cross stakes 3 ft. long. You will want eight of them for one side of the arch.

Start the lowest stake 20 in. from the butt. Cut them with a handsaw or chop the ends to fit each pole. The angle at which they are cut is somewhat deceptive. Remember that they are not nailed to the middle of the posts nor right on the sides. Rather they are fixed between the two so that they just clear those running in the opposite direction. This means that they are chopped in planes roughly at 45 deg. with each other as in Fig. 4. To ensure this, chop the first end, reverse the wood and hold it so that this first cut faces the shoulder and make the second cut. Remember to fix them in the right direction or the cuts will be entirely wrong. Placing the stake in position will make the correct direction obvious. Having nailed on four stakes in one direction as in Fig. 3, turn the whole over and fix the remaining four to run across them.

When you have completed the sides, cut four 4 ft. stakes (assuming that the arch is to be 4 ft. wide). Lay the two sides on the ground, erect each side on its edge, and nail on a 4 ft. stake at the bottom 20 in. from butt end. The top of the arch tapers to about 3 ft. 10 in. at the top and another stake is nailed in here. Square up the two sides and nail a temporary stake across the diagonal as in Fig. 6. Stand the arch up and nail another stake at the other side of the base of the arch.

Lay the arch on the ground again and cut off two poles of approximately 2½ in. diameter and 5 ft. long for the top rails. Hold one rail to the top of the arch pole and mark the top rail each side of arch pole. Put the rail in the vice, saw in about half an inch, and then chisel out a groove as in Fig. 7. Fit the rail back on the poles and repeat with the other top rail.

For the corner brackets cut off four 2 ft. 6 in. poles 2½ in. diameter. Mark from the top rail 14 in. down the posts, and cut the corners of the brackets with the saw. Turn around on side again and fill in the top rails with 2 ft. stakes.

**Erecting.**—When erecting the arch dig two holes to take the sides. If you have peeled and charred the butts it will not be necessary to treat them with wood preservative, but if you only peeled them, I advise you to treat them with solignum. Keep the temporary cross stakes on until you have the arch in the ground. Put plenty of old rubble around the poles and well ram in. When completed knock off the temporary cross stakes.

Make sure before filling in earth and rubble that your arch is upright from the front view and the side view. You can, of course, make any other depth or width. A stock arch size is 4 ft. across the path, 15 in. deep and 8 ft. high and 20 in. in the ground. This size is generally used for a path 2 ft. 6 in. wide. The flat top arch is the strongest arch you can make.

By fixing these arches approximately 8 ft. apart a pergola can be made by connecting up on each side of top rails. If these instructions are followed you can get a professional touch to your rustic arch. (191)

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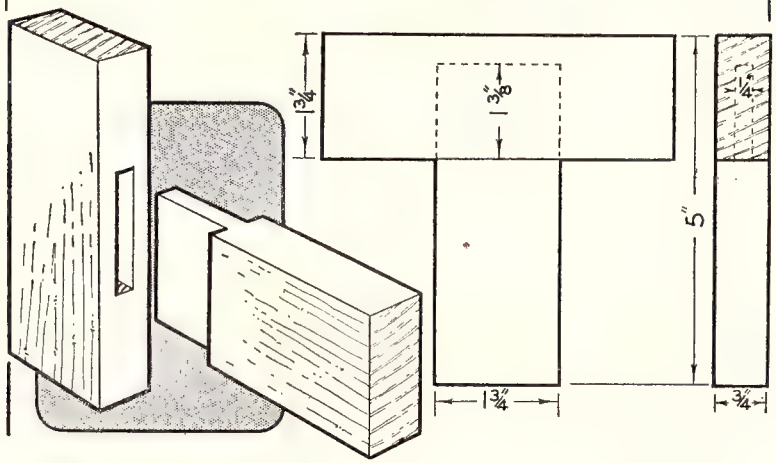
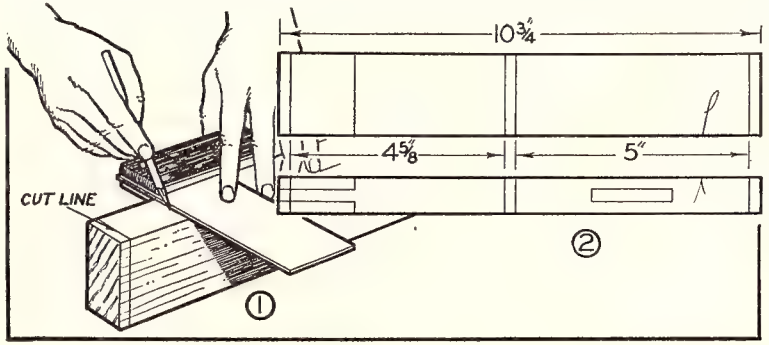
WORKSHOP FOLDER

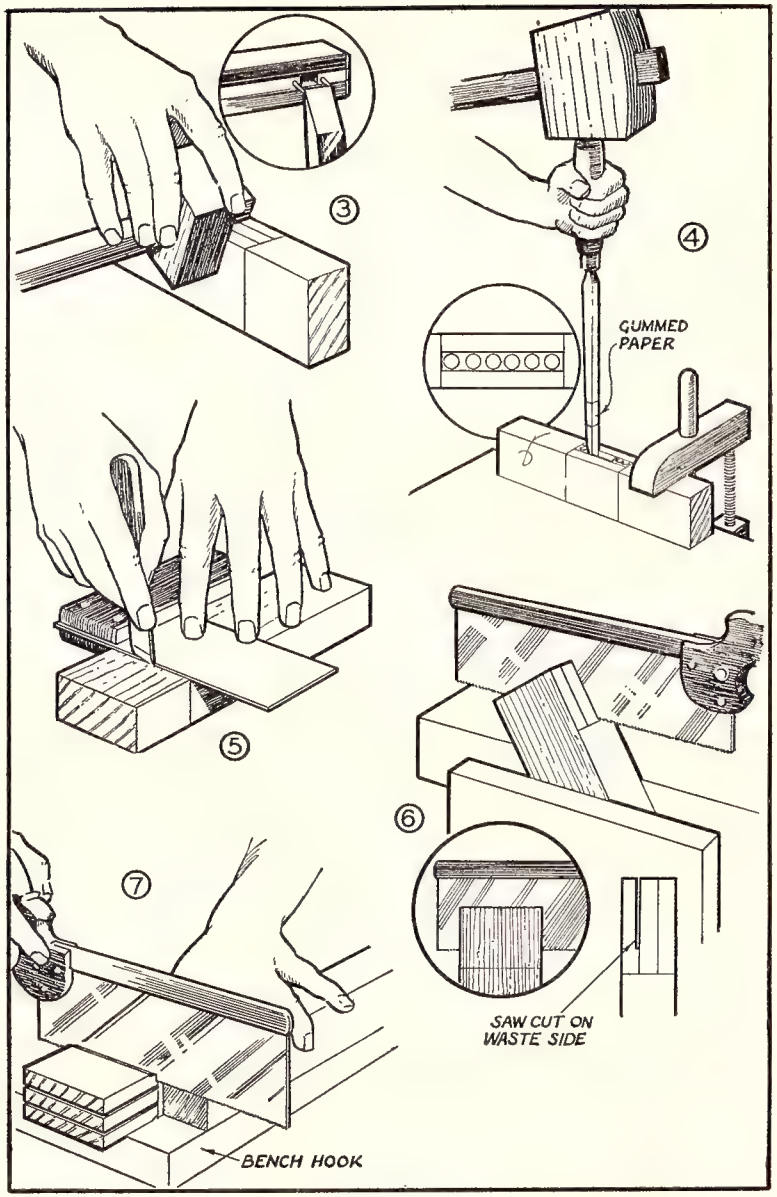
# BLIND MORTISE and TENON




*Thickness of tenon is determined by size of mortise chisel which should be approximately one third thickness of wood. The tenon should make a hand-tight fit and be straight from the saw*

1. Prepare timber and mark length of mortise using pencil; knife lines for waste and shoulders of tenon.
2. Sizes of timber if in a single length for practice.
3. Set mortise gauge to width of mortise chisel (¼ in.). Use gauge from face side only.
4. To remove bulk of waste bore holes with $\frac{5}{16}$ in. bit, standing at end of work. Clamp to bench. Stick strip of gummed paper to chisel to serve as a depth gauge. Again stand at end and, starting at centre, work towards ends.
5. Mark shoulders with marking knife or chisel. Square all round working from either face side or edge.
6. Mark tenon with gauge from face side. Fix wood at an angle to start cuts and hold saw to waste side of gauge line. Reverse and fix upright to finish (inset).
7. Cut sloping grooves with chisel at shoulders to form channels for the saw when cutting. (190)




**If difficulty is experienced in holding brace upright boring to remove waste, as in (4), can be omitted**

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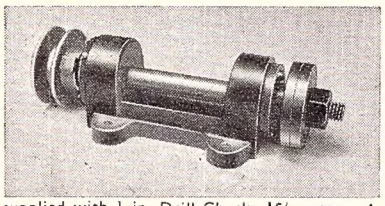

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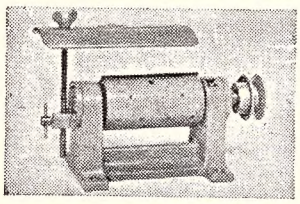

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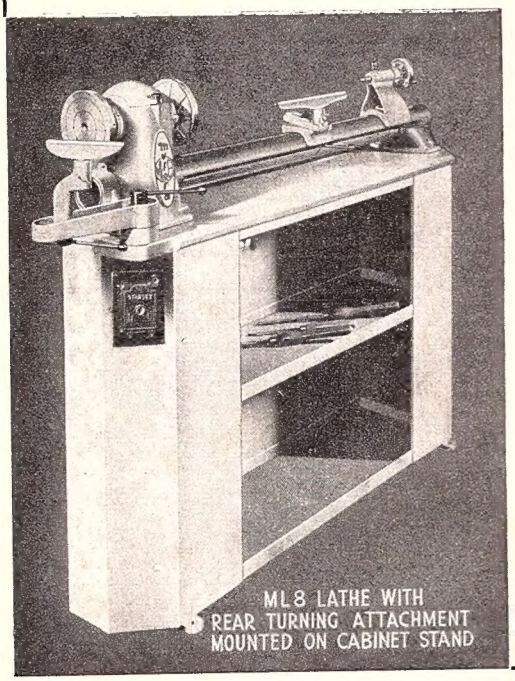


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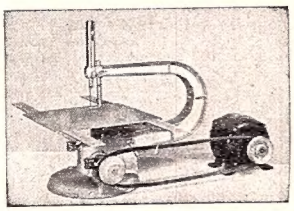

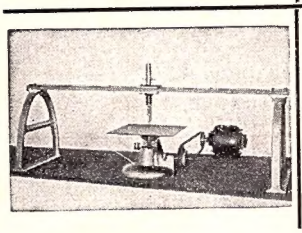

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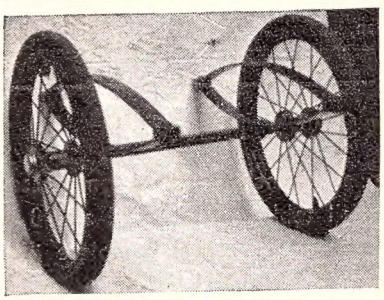

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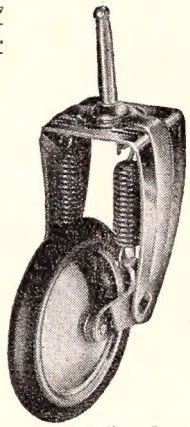

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